PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Heartiest

Season's

Greetings

GOTTESMAN & COMPANY

—INCORPORATED—

DEC.
16
1937

Vol. CV
No. 25

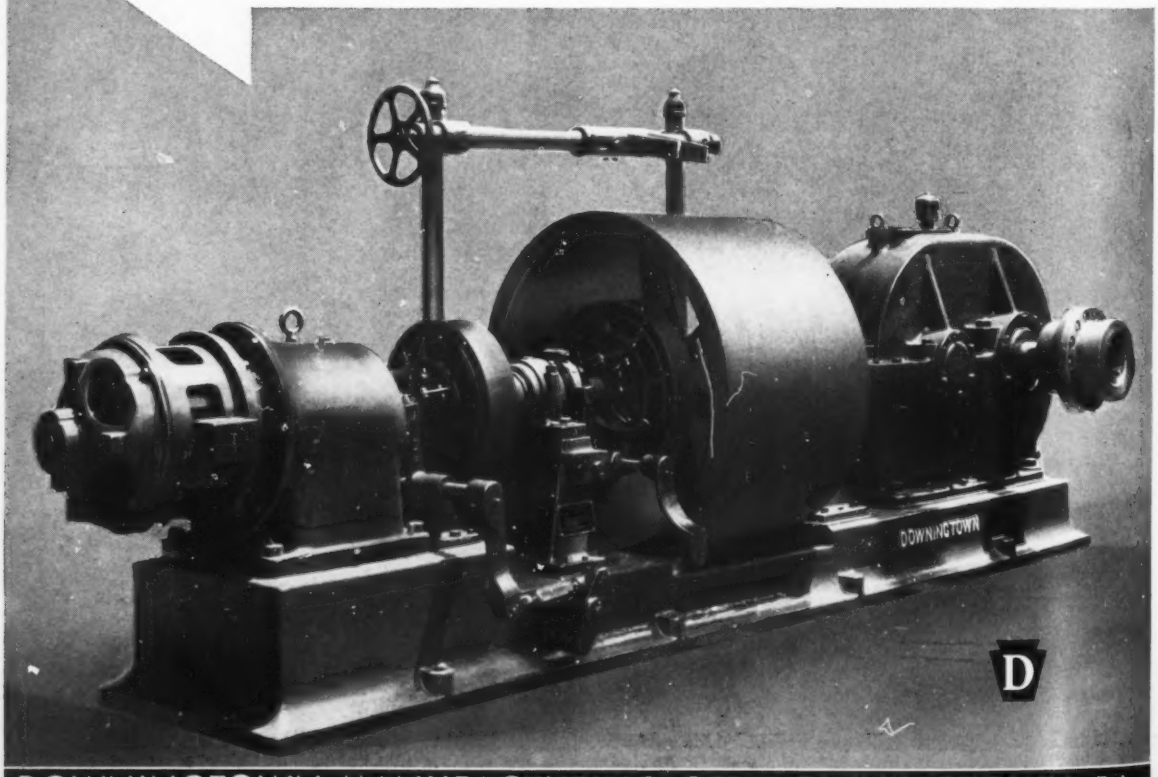
LIBRARY
OF WASHINGTON
SEATTLE

DOWNINGTOWN

Modern Motorized Reversing Mechanism
Totally enclosed double reduction spiral bevel gear unit—Continuous splash lubrication system—Gears and shafts heat-treated
All shafts operate in anti-friction bearings.

REVERSING CALENDER DRIVE

Quiet, Cool Running Unit—96% to 98% Efficient
Modern construction is insurance against breakdowns, losses in production and excessive maintenance charges—This is only one unit in our complete line of modern floor drives.



DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.

Entered as second class matter at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Stroudsburg, Pa. Executive and Editorial office: 15 W. 47th St., New York, N. Y.
Domestic subscription U. S. and possessions, $4.00 per year.

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

Executive and Editorial Offices: 15 West 47th Street, N. Y. C.
Western Rep.—H. K. Vinton, 123 W. Madison St., Chicago, Ill.

The Contents of this Publication are Copyrighted

TABLE OF CONTENTS

$3,400,000 RFC Loan for Texas Paper Mill .. 21
Northern to Build Steam Plant at Green Bay 22
Newsprint Buying Aids Slow Paper Market .. 24
Paper and Cordage Assn. Elect Officers 26
Scott Paper Profits Up 32 Per Cent 26
Production at Capacity for Part of 1937 26
New Beloit Machine Being Installed 26
German Commission Negotiations Resented .. 29
To Be Superintendent at Lebanon 30
Indianapolis Demand Slow 30
Swedish Pulp Well Sold Ahead 30
Financial News of Pulp and Paper Industry .. 31
Dennison Capital Plan Abandoned 31
Great Lakes Paper Gains 31
Dryden Paper Earnings Rise 31
Mill Taxes Meet a City's Payroll 31
Hoberg Mills Profits Up 31
R. T. Vanderbilt Co. Completes Laboratory .. 32
Isaac Gilman Is Given Testimonial Dinner .. 33
Mills Report Backlog Orders Low 33
Obituary 34
Printing for Production 34
Construction News 38
May Build New Pulp Mill in South 38
Fire Burns Coal Conveyor of Parsons Mill .. 38
Editorial 40
Sizing Paper with Rosin 41
Production Ratio Report 41
Wrapping Paper Green Book 41
Technical Section
Review of the Paper Industry Literature .. 43
TAPPI Notes 44
Delaware Valley TAPPI Discusses Holocellulose 45
Instrumentation Studies. XXI 46
Imports of Paper and Paper Stock 51
New York Market Review 53
Miscellaneous Markets 54
Market Quotations 56

The PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Copyright, 1937, by the Lockwood Trade Journal Co., Inc.

CRYING "STOP THIEF!"

WON'T STOP Slimform

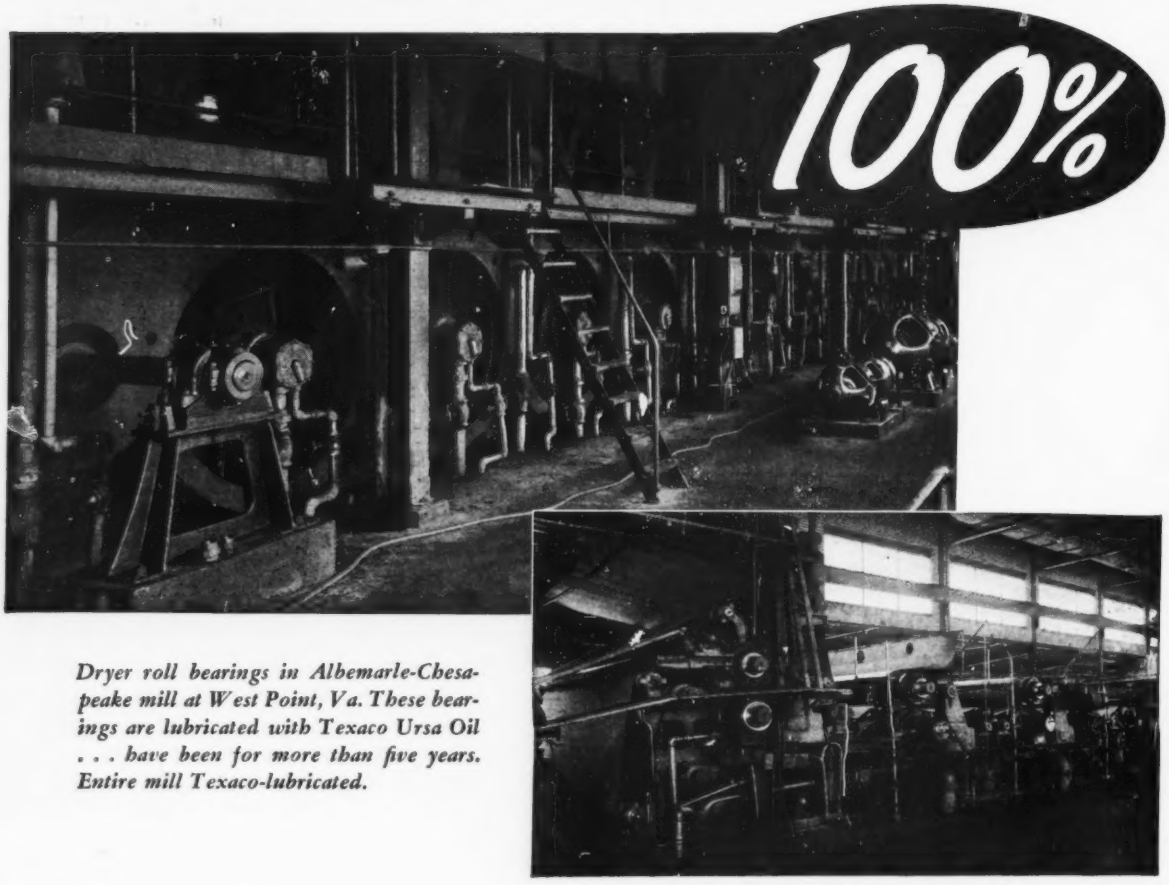
WHEN profits disappear as a result of slime troubles in paper mills—impaired quality of product, increased production costs and loss in paper making materials—it's time to investigate the proven method of slime elimination used in over 200 leading mills today.

In your mill too—controlled application of chlorine and ammonia with W & T apparatus will successfully eliminate slime at a cost of from 1½ cents to 6 cents per ton of product. Research Publication #327 "Slime in Paper Mills—Its Origin and Prevention", reviews the evidence. Write for your copy today.

(S) tock losses—bacterial decomposition and reworking of stock
(L) owered Quality—slime spots—pin holes—objectionable odors
(I) ncreased Costs—in water—heat—labor—chemicals
(M) aintenance Troubles—blinded wires—plugged felts
(F) requent Clean-ups—slime breaks—poor sheet formation
(O) bstruction of Lines—stock and white water lines
(R) ecirculation Difficulties—slime growths in recirculated systems
(M) echanical Strain on felts and wires—shortened useful felt and wire life

WALLACE & TIERNAN CO. INC.
Manufacturers of Chlorine and Ammonia Control Apparatus · NEWARK, NEW JERSEY · Branches in Principal Cities
OTHER W&T CONTROL SERVICES:
Automatic pH Control Dry Chemical Feeders Bleach Plant Equipment Testing Instruments for Chlorine and pH

ALBEMARLE-CHESAPEAKE



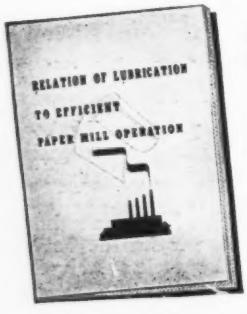
Dryer roll bearings in Albemarle-Chesapeake mill at West Point, Va. These bearings are lubricated with Texaco Ursa Oil . . . have been for more than five years. Entire mill Texaco-lubricated.

The Albemarle-Chesapeake Corporation, West Point, Virginia, were very much concerned about deposits in the circulating system in their Fourdriniers. At least once each year . . . sometimes more frequently . . . they had to shut down, to remove this sludgy deposit from the system.

Switching over to Texaco Ursa Oil, the trouble very soon righted itself, and has never returned. That was over five years ago . . . As a result of the outstanding performance of Texaco Ursa Oil, one by one, more Texaco Lubricants were adopted until every unit and machine in the mill is Texaco-lubricated . . . 100%.

Switching to Texaco might effect a similar saving in *your* mill. It's easy to find out.

Trained lubrication engineers are available for consultation on the selection and application of Texaco Paper Mill Lubricants. Prompt deliveries assured through 2070 warehouse plants throughout the United States. The Texas Company, 135 East 42nd Street, New York City.



40-page booklet for all paper mill operators, free for the asking.

TEXACO

PAPER MILL LUBRICANTS

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

SIXTY-SIXTH YEAR

PAPER

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with Paper Trade Journal.

Vol. CV, No. 25 Thursday, December 16, 1937

PAPER

Established Sept. 21, 1910
Consolidated Feb. 19, 1925
with Paper Trade Journal.

$3,400,000 RFC Loan for Texas Paper Mill

In Addition Committee Authorized To Promote Financing of Newsprint Plant At Lufkin Has Raised An Additional $1,600,000 From Subscriptions To Stock Which Will Be Issued When the Company Is Organized.

A press dispatch from Lufkin, Texas, in the *Wall Street Journal,* dated Tuesday of this week, stated that "The committee which has been authorized to promote the financing of the proposed paper pulp and newsprint mill to be constructed here has secured a loan of $3,400,000 from Reconstruction Finance Corporation for the purpose, and has raised an additional $1,600,000 from subscriptions to stock in the enterprise, which will be issued when the company is formally organized. Steps toward the actual construction of the plant will not be taken until approximately $2,000,000 more stock has been subscribed, it was stated here. Yellow pine paper pulp will be used for manufacturing the paper."

Agreement Conditional

In the same issue of the *Wall Street Journal,* a dispatch dated Washington, stated that "A conditional agreement for a Reconstruction Finance Corporation loan of $3,400,000 was made with Southern Paper Mills on September 29, 1937, according to the RFC. The governmental agency, however, did not say that loan had been made."

November Newsprint Statistics

Production of newsprint in Canada during November 1937, amounted to 302,236 tons and shipments to 335,777 tons, according to the News Print Service Bureau. Production in the United States was 79,338 tons and shipments 82,967 tons, making a total United States and Canadian newsprint production of 381,574 tons and shipments of 418,744 tons. During November 27,243 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 408,817 tons. Total production in November 1936 was 394,284 tons.

The Canadian mills produced 456,182 tons more in the first eleven months of 1937 than in the first eleven months of 1936, which was an increase of fifteen and eight tenths percent. The output in the United States was 23,017 tons or two and seven tenths percent more than in the first eleven months of 1936, and in Newfoundland 26,334 tons or eight and eight tenths percent more, making a total increase of 505,533 tons, or twelve and five tenths percent. Stocks of newsprint paper at the end of November were reported at 47,772 tons at Canadian mills and 24,064 tons at United States mills, making a combined total of 71,836 tons compared with 109,006 tons on October 31, 1937.

Amalgamated Paper Co. To Suspend

[FROM OUR REGULAR CORRESPONDENT]

Fort Edward, N. Y., December 13, 1937.—Announcement is made here that the Amalgamated Paper Company plans to suspend operations early next year. The company was formed in 1928 by Frank M. Ball and John W. King when they erected a plant on land leased from the International Paper Company. The concern built up an extensive business with educational boards and jobbers in the manufacture of school tablets and ruled paper of a wide variety. During the winter season about 35 hands were employed and more during the summer. Much of the equipment of the plant has been sold in Chicago where it will be shipped as soon as the stock on hand has been handled. A few years ago Mr. Ball acquired the interest of his partner and has since operated the plant. Several years ago he purchased a home on Lake George and moved there from New York City. It was stated that the company's plant has been sold to the International Paper Company.

Alan M. Lincoln Dies Suddenly

Alan M. Lincoln, 49, senior partner in Clarke & Company, paper brokers of 475 Fifth avenue, New York, died in Grand Central emergency hospital December 7, of a supposed heart attack.

Mr. Lincoln was a native of Philadelphia and had lived on his large estate at Rye, N. Y., for 13 years. He was chairman of the nominating committee of the United Hospital, a vestryman of Christ's Episcopal Church and a director of the Rye Scout Foundation. He was also a member of the Apawamis and Manursing Island clubs. Survivors include his widow and a daughter, Mrs. Ledyard S. Bowen of New York.

Northern to Build Steam Plant at Green Bay

Plans To Build $750,000 Steam Plant and Retire Bonds Revealed At Government Hearing — Salesmen Visit Kimberly-Clark Mills — Dr. Barron To Address Paper Institute — Other News of the Industry.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 13, 1937.—Plans to build a $750,000 steam plant and to retire outstanding bonds were revealed by Harry Gochnauer, chief engineer of the Northern Paper Mills, Green Bay, Wis., when he appeared before the Federal Power Commission at Washington, D. C., a week ago to secure approval of the sale of its two hydro-electric plants on the Menominee River near Amberg, Wis., to the Wisconsin Michigan Power Company. William E. Schubert, general manager, and Ralph E. Moody, vice-president of the power company, also presented arguments at the hearing.

Mr. Gochnauer testified that the cost of constructing the Chalk Hills and White Rapids hydro-electric plants by the Northern in 1926 was $3,750,000, and that the purchase price of $2,350,000 agreed upon therefore was $1,400,000 below cost. He said the new steam plant at Green Bay would take care of current requirements as a by-product of paper mill operations, and that construction of the plant would give employment to 200 men for five months. The balance above the $750,000 required for construction would be used to retire bonds.

Mr. Schubert told the commission the purchase by his company would be "mutually advantageous." The paper mill has been able to use power from the two plants only irregularly, he said, whereas the Wisconsin Michigan company could make full use of it. The power company for ten years has purchased the entire output of the Chalk Hills plant, and part of the power from the White Rapids plant. The contract expired last June and has not been renewed. Some of the power, he added, would be transmitted to the Wisconsin Public Service Corporation at Green Bay for resale.

Mr. Moody explained that his company planned to issue $2,000,000 of a present series of 3¾ per cent bonds to an insurance company, and $700,000 in notes to finance the purchase. The difference between the purchase price and the security issues would be used as working capital. A contract has already been signed with an unidentified insurance company to take the entire amount, Mr. Moody said. The deal also includes transmission lines from Amberg to Green Bay. The Wisconsin Michigan Power Company is a subsidiary of the North American Company.

Salesmen Visit Kimberly-Clark Mills

An interesting observation tour was enjoyed by sixty executives and salesmen of the International Cellucotton Products Company at Chicago, during a visit December 8 to the Kimberly-Clark Corporation's mills in the Fox River Valley. They arrived aboard a special train. During the morning they were shown the manufacture of sulphite pulp and paper at the mills at Neenah and Kimberly, Wis., with buses provided for transportation. They had breakfast at the Valley Inn at Neenah, and at noon were served a luncheon at the Lakeview mill at Neenah. The afternoon up to 4 o'clock was spent studying the manufacture of Kleenex and Kotex at the Lakeview plant. A business meeting was then held at the Company's main offices, where talks were given by F. J. Sensenbrenner, president, Ernst Mahler, executive-vice-president, and Jack Kimberly. Officials of the company joined in a dinner in the evening at Valley Inn, where approximately 100 were present. Entertainment was enjoyed, and Mr. Sensenbrenner and Mr. Mahler again spoke. The delegation returned to Chicago the same evening aboard its special train.

Final Industrial Relations Ad Issued

The last of a series of five large advertisements published by the Kimberly-Clark Corporation, Neenah, Wis., dealing with industrial relations, appeared in newspapers of the Fox River Valley last week. In it, S. F. Shattuck, vice-president, brought out that almost 1,500 persons have been added to Kimberly-Clark payrolls since the beginning of 1933 through the adoption of the basic six-hour day and the normal growth of the business. This represents an increase of 50 per cent in less than five years, his statement reads. Payrolls in its various mills amount to almost $150,000 per week, a substantial increase in the amount of money flowing into the channels of trade in localities where the mills and offices are located.

Mr. Shattuck adds in conclusion: "Good employer-employee relations are more dependent than the average citizen might think on efficient operation, production, and sales. Unless the business progresses and prospers, everything else fails. Efficient conduct of the business is never possible in the face of industrial strife. No management can maintain satisfactory employee relationships without efficiency both on the part of employees and management."

Dr. Barron To Address Paper Institute

Dr. E. S. Guzman Barron, assistant professor of biochemistry of the University of Chicago, will speak at a meeting Monday evening, December 13, of the northeastern Wisconsin section of the American Chemical Society at the Institute of Paper Chemistry, Appleton, Wis. His subject will be "Oxidation—Reduction Systems of Biological Importance." He will describe recent research in this field.

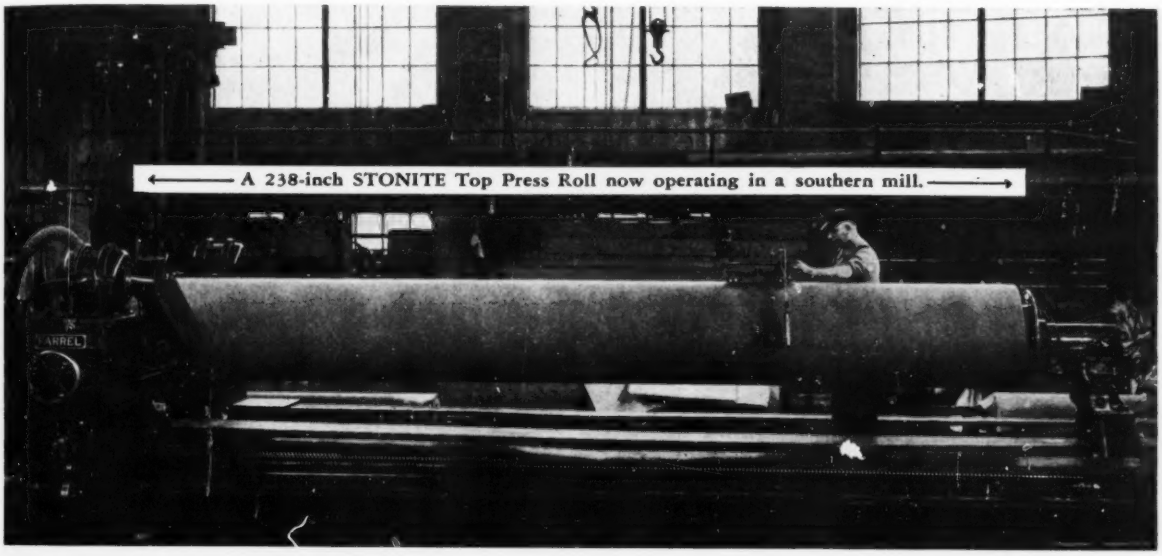
The Lake States section of the Technical Association of the Pulp and Paper Industry also will meet Monday evening, with a dinner at Conway hotel at Appleton. A representative of the Beloit Iron Works, Beloit, Wis., will speak on "New Developments in Paper Machine Manufacture." Several films will illustrate the talk, and a demonstration will be given with a model of a moveable type of Fourdriner

In any Language

STONITE*

*(Ebonite and Granulated Stone Composite U. S. Patent 1,787,890 Re. 18,111)

Means Better PRESS ROLL *Performance!*



A 238-inch STONITE Top Press Roll now operating in a southern mill.

Over a thousand STONITE top press and smoothing press rolls in service throughout the world are demonstrating beyond question the superiority of this patented Stowe-Woodward compound. These mills make every grade from board to tissue. STONITE Rolls help them produce paper with a better, more uniform finish, help them eliminate pick-up and breaks, make the presses behave better than they have ever behaved before. If you wonder why so many mills are putting in STONITE Rolls, may we show you? Write for the complete story.

STOWE-WOODWARD, INC.

NEWTON UPPER FALLS • MASSACHUSETTS

NEW YORK OFFICE • WOOLWORTH BUILDING

Makers of WHITE STAR *Rubber Covered Rolls,* TANNITE *Couch Rolls*
STONITE *Top Press and Smoothing Rolls—All by the* COREWELD *Process*

Manufactured on the Pacific Coast by HUNTINGTON RUBBER MILLS, Seattle, Washington

Newsprint Buying Aids Slow Paper Market

Chicago Trade Reports Basic Factors Favorable For Resumption of Progress In 1938 — Illinois Dept. of Labor To Draft Health and Safety Rules — Paper Ass'n Re-elects Officers — Other Late Trade News.

[FROM OUR REGULAR CORRESPONDENT]

Chicago, Ill., December 13, 1937.—The Chicago paper trade is in the doldrums. The season of the year, plus the reported recessions in business, has combined to keep buyers out of the market in large numbers. However, the basic market situation continues to be firm and conditions are favorable for a resumption of progress in the markets after the first of the year. The only specific line which is not included in the category of "slow" is newsprint, where the price advances scheduled for the first of the year has brought a considerable quantity of advance buying into this market. Other lines show little movement, krafts being reported slow with little interest on the part of buyers. Books and covers remain in the narrow channel of the past few weeks, while the entire list of bonds and ledgers show little or no activity. The board market is quiet. Waste papers are considerably off in demand with buyers refusing to consider the plentiful offers available, with mill prices adjusted downward. The considerable increase in costs of production, including labor, raw materials and other factors, will continue, in the opinion of local experts, to force a higher price level as soon as year end fetters are out of the way and materially depleted inventories must, of necessity, be filled.

To Draft Health and Safety Rules

Under the Health and Safety Act of the State of Illinois the State Department of Labor appointed a committee of fourteen men, seven from employers and seven from labor, to draft rules covering health and safety provisions. The Committee has just released a printed document containing the first set of rules and including those covering paper making machines and printing and paper machines. The rules covering the former, all of which will be presented at a hearing on January 4, are as follows:

Calender Rolls, Class B: (a) the calender rolls shall be guarded or equipped with a feeding device at in-running side so arranged that the material can be fed without permitting the fingers of the operator to be caught between the rolls and (b) the bottom rolls of the calender stack shall be guarded at rear of stack in such manner as to prevent persons from putting broken paper through the bottom rolls.

Paper Slitter, Class B, (a) the discs of paper slitters exposed to contact shall be so guarded that the operator cannot come into contact with the cutting edge of the disc and (b) discs are exposed to contact when within reach of the operator while standing on the working floor or platform.

The rules covering printing and paper machines are too lengthy to be printed here although any interested parties may secure the entire list of rules by writing the Industrial Commissioner of Illinios, 205 W. Wacker Drive, Chicago. These rules cover paper punches, paper cutters, cutters and creasers, rotary scoring machines, slotters ending and edge attaching machines and lacing or plyleafing machines.

It is recommended that the paper industry with interests in Illinois and other States as well should follow the development of these rules closely.

Paper Assn. Re-elects Officers

The Chicago Paper Association, local organization of coarse paper merchants, showed its confidence in the work done by its officers during the past year by re-electing virtually the entire slate at the annual meeting held the latter part of November. Henry Thoms, Peerless Paper Company, was re-elected president; H. W. Borchardt, Pilcher-Hamilton Company, vice president; and J. L. Richey, secretary-treasurer of the organization. H. E. Weinstein was also reelected second vice president while Willian Chukerman, president two years ago, continues as the chairman of the board of directors. Other members of the board are Mortimer Inlander of Inlander, Steindler and James S. Danehy of the Schwarz Paper Company.

Heller & Merz Open Laboratory

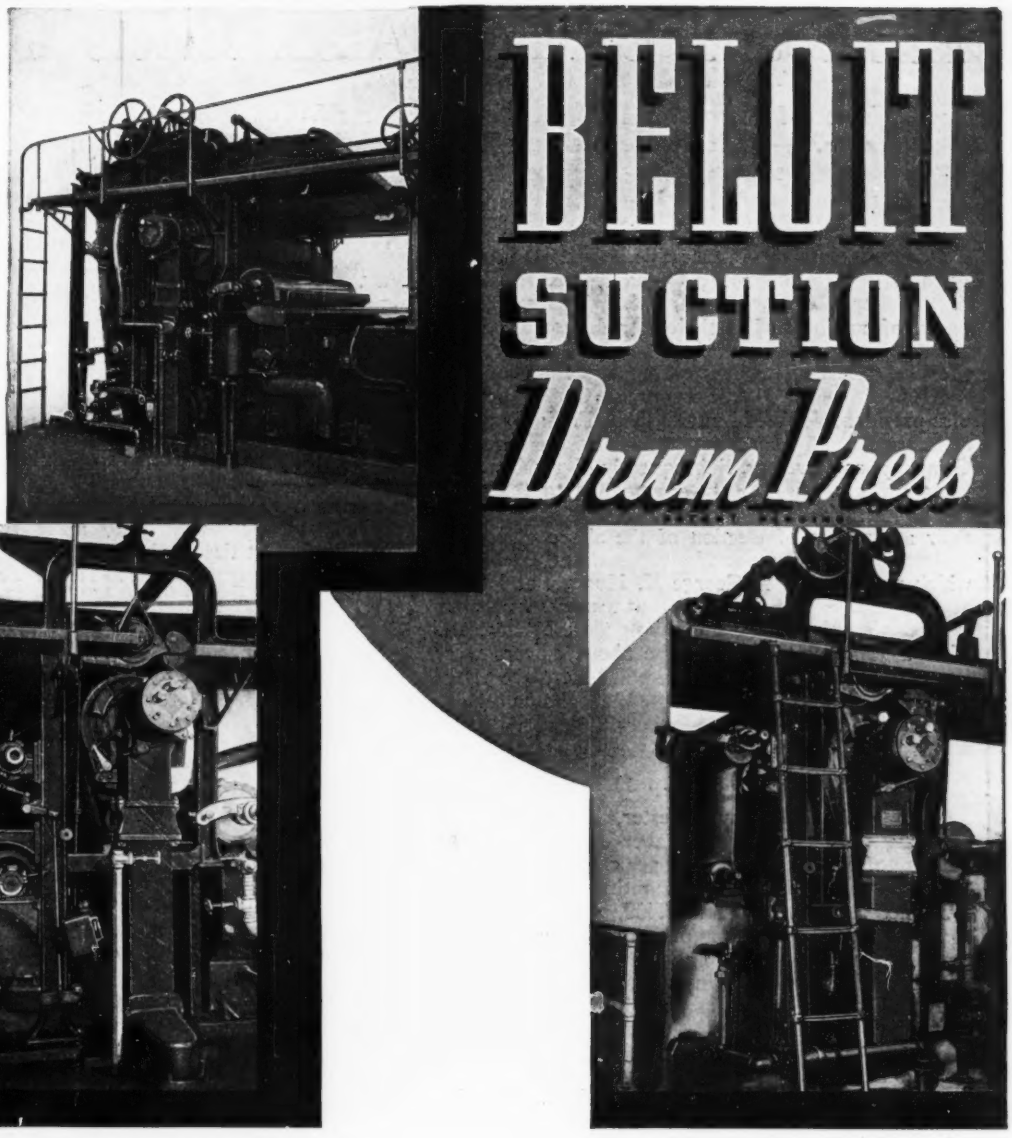
The eastern organization of Heller & Merz, with headquarters in New Jersey, has recently opened a Paper Application Laboratory at 146 West Kinzie Street, Chicago. The company will have a number of experienced men, mostly from the main office, to service a rapidly growing clientele in Missouri, Kansas, Illinois, Indiana, Minnesota, Michigan and Wisconsin.

Bishop Promoted By Container Corp.

Charles Bishop who has recently completed the training course developed by the Container Corporation of America as an adequate preface for sales work, has been promoted to the Davenport, Iowa, office of the Container organization where he will contact accounts in that territory in a sales capacity.

Midwest Assn. Plan for Holidays

The midwest division of the Salesmens Association of the Paper Industry will have the privilege next Monday, December 13, of listening to the annual Christmas message given by the chaplain of the Association, the Reverend George Craig Stewart. The discussions of this internationally known author, lecturer and church executive, are always looked forward to as a treat by the salesmen and their fortunate guests. The Association is also completing plans for the Annual Christmas party scheduled for Monday, December 29, at the Hotel Sherman. Arrangements are again in the capable hands of chairman Ben Babbitt.



Results: Equivalent to suction drum and suction primary press combined

An absolute necessity on every board machine

Superior to all other methods of water removal on wet felts. • There must be a reason for over thirty of these rolls.

Ask the mills who installed them.

THE BELOIT WAY BELOIT IRON WORKS PAPER MACH'Y BELOIT, WIS. **IS THE MODERN WAY**

BELOIT IRON WORKS, Beloit, Wisconsin, U. S. A.

Paper and Cordage Assn. Elects Officers

List of Nominees Presented To Members Were Elected To Serve For 1938 — Induction of Officers Will Take Place At Ass'ns Christmas Meeting, December 23—Review of the Scott Paper Co. From 1910 To Date.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., December 13, 1937.—As announced in these columns a fortnight ago, The Philadelphia Paper & Cordage Association presented the names of nominees of its choice for election as officers for the year 1938, these being Joseph H. Miller, vice-president, Garrett-Buchanan Company for president; Fred I. Brower, Atlantic Gummed Corporation, as vice-president; T. W. Monteith, J. E. Frick Company, as treasurer, and John Shinners, Acme Specialty-Sales Company, as secretary. Subsequently digressing from the usual custom, ballots were mailed to the membership, which totals 110, asking that they signify their acceptance of election of the above officers or indicate their own choice of nominees on these ballots, which were mailed to George K. Hooper, and today at 2 P. M. a committee met at Garrett-Buchanan Company's office where the ballots were opened, and after a full count of same, the above officers were elected unanimously. Induction will take place at the annual Christmas Party of the Association, which will be held Thursday, December 23rd, at Adelphia Hotel.

Scott Paper Profits Up 32 Per Cent

Scott Paper Company, Chester, Pa., reports net sales for the month of November of $1,019,000, an increase of approximately 32.2 per cent over the same month last year. For the 11 months ended Nov. 27, 1937, net sales totaled $12,768,400, a gain of 19 per cent over the corresponding period of 1936.

Total shipments in the month of November were 29.9 per cent greater than in the same month last year, and for the 11 months period increased 16.8 per cent.

Scott Paper Company's initial manufacturing operations at Chester, Pa., began in 1910 with two small, slow-speed cylinder paper machines. Sales for that year were $726,000.

The original machines and four others, subsequently installed, have long since been replaced by wide high-speed Fourdrinier machines. It has been the policy of the company to replace its older paper-making units with modern equipment as sales warranted increasing the plant capacity. At the end of last year when sales reached a new high record of $11,600,000, there were six modern machines in continuous operation, manned by four six-hour shifts of operators and supervisors.

Production at Capacity for Part of 1937

The further gain in business in the first half of 1937 has taxed their paper-making equipment to the utmost. The Paper Mill operated at full capacity in the first six months of the year. Production for the period, however, fell 7% short of orders booked.

The continued increase of Scott Products made it necessary to again enlarge the capacity of the plant. An expansion program of a new paper machine, finishing equipment, enlarged water filtration plant and necessary building additions has been undertaken.

New Beloit Machine Being Installed

Assembly of the paper machine constructed at Beloit Iron Works, Beloit, Wis., has begun at Chester and it is hoped that the new paper-making unit will be in production by the latter part of this month. The new machine is being installed in an extension of the plant, for which ground was broken in June.

Capacity To Be Increased 16 Per Cent

Manufacturing capacity will be increased approximately 16% when "Number 14," as the new machine is tentatively designated, goes into production. It has been designed primarily to make Scot-Tissue and Waldorf toilet tissues, but can readily be adjusted to produce the paper for Scot-Tissue Towels, Waldorf Towels or Scot-Towels for Kitchen Use.

The total cost of the current plant expansion—paper and finishing machines, buildings and accessories—will be about $1,250,000. It is not expected that these expenditures will involve any outside financing.

To Specify Holyoke Papers

HOLYOKE, Mass., December 13, 1937.—Announcement was made here this week that all papers and supplies used by the Roger Smith Hotels corporation which are available from Holyoke mills, are to be specified in future purchasing. The Roger Smith corporation operates a large chain of hotels and recently took over the operation of the Hotel Holyoke, the renovated Nonotuck Hotel. The decision to specify Holyoke-Made products is in response to efforts of the Chamber of Commerce to demonstrate that the hotel corporation is vitally interested in the activity of the Holyoke mills.

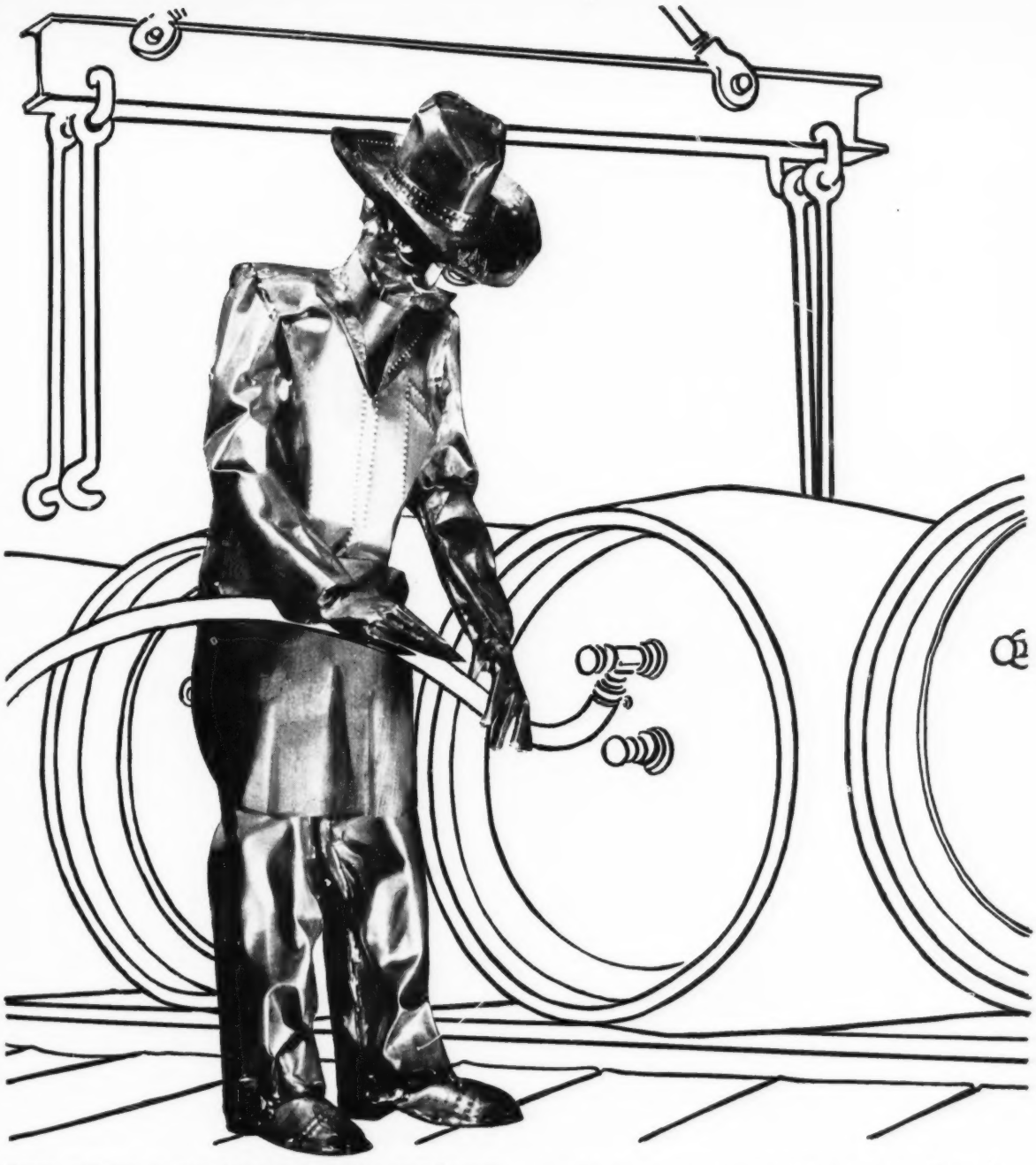
Correction

In an article entitled, "Shipping Dilts Hydrafiners to Crossett", in the issue of the PAPER TRADE JOURNAL, December 9, 1937, it was stated "with these Dilts Hydrafiners in operation, this company is now producing up to 20 tons of fine grade Kraft paper per day."

Obviously, this was a typographical error and the statement should have read "producing up to 200 tons of fine grade Kraft paper per day."

Cooper Alloy Steels

"Stainless steel castings from 1 ounce to 2 tons", is the title of a bulletin issued by The Cooper Alloy Foundry Company, Elizabeth, N. J. The company states that any wanted alloy to resist corrosion, heat and abrasion can be cast to required specifications.



EBG GETS A CLEAN BILL OF HEALTH . . . CONTAINERS GIVEN HYDROSTATIC TEST. *All containers —cylinders, drums and tank cars—are given hydrostatic tests regularly to insure complete safety in handling and shipping. A clean bill of health is insisted upon at EBG. It is the reason behind the exacting EBG system of cleaning and reconditioning of containers. .and it accounts for the completely efficient results that EBG Liquid Chlorine, produced to rigidly maintained standards of purity and uniformity, gives wherever it is used.*

•

ELECTRO BLEACHING GAS COMPANY
Main Office: 60 East 42nd Street, New York, N. Y.
Plant: Niagara Falls, N. Y.

EBG Liquid Chlorine
FIRST IN THE COUNTRY

German Commission Negotiations Resented

Report That Consolidated Paper Corp. May Sell Anticosti Island Meets Vigorous Opposition — Premier Duplessis Asserts Quebec Government Will Not Tolerate It — Forestry Training For Jobless — Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 13, 1937.—Whether it is a storm in a teacup or not, the fact remains that the negotiations between a German syndicate and the Consolidated Paper Corporation for the purchase of pulpwood from the Island of Anticosti has created such a furore that Premier Duplessis, on behalf of the Quebec government, has felt it necessary to issue a public statement to the effect that under no consideration will the Government allow any alienation of its patrimony in the island, which he describes as "an important strategic outpost."

At the present time a Commission of German forestry and harbor experts is visiting Anticosti Island in company with representatives of the Consolidated Paper Company, which owns the island. Prior to their departure, the members of the Commission said their object was only to inspect possible sources of pulp for German mills, owing to the dwindling character of European supplies.

The Rev. Canon Scott, the most famous war padre in Canada, in a letter to the press, has issued a warning as to the possible danger of allowing German proprietary rights on the island. He recalls that prior to the war a German company bought property at the end of the Isle of Orleans for the ostensible purpose of establishing a cement manufacturing plant, and that after the war broke out it was discovered that concrete gun emplacements were being constructed, which, says the Canon, would give a battery established there complete control of the river. The Island of Orleans, it may be explained, is in the St. Lawrence, opposite the city of Quebec.

Regarding Anticosti Island, Canon Scott says: "The island would be of supreme value as an aeroplane base. The establishment upon it of 1,500 or 2,000 settlers under the exact discipline of German mill owners would be a constant and irritating source of apprehension."

The Quebec Chronicle-Telegraph has been the most prominent in voicing objection to German interests in Anticosti. It recalls that this year there have been visits of a number of German sportsmen on hunting trips in Quebec. It says that these visits have been "on the pretext of hunting and fishing, or taking photographs, and of industrial investigations," and adds:

"If, as we are now told, the German capitalists have no thought of buying Anticosti or even of operating a sulphite mill there, but are merely shopping around for supplies of pulp, why is it necessary to send out a party of engineers and other technicians to explore the island? Surely this is an unusual procedure and we renew our protest against possible hostile foreigners being given carte blanche to survey our territory as they please. Admittedly, the matter is a delicate one but we trust that Ottawa is both wide awake and vigilant."

Premier Duplessis, in a statement on the subject said: "I have notified the Consolidated Paper Corporation (present owners of the island) that the Government will not tolerate on the part of this company, or any other company attitudes which are against the policy of the Government, which received an express mandate from the people, and which attitudes are of a nature to harm the province.

"Anticosti Island belongs to the Province of Quebec," continued Mr. Duplessis. "It is a strategic outpost. Needless to say that the Government of Quebec will protect it. Furthermore, ever since we have been in power we have refused to permit the export of raw material from the forests destined for the fabrication of pulp and paper.

"The policy of the present Government is, first, to assure raw materials for the industries of Quebec, and, secondly, if it is possible, for the industries of the sister provinces.

"We believe to be intolerable a policy which consists in feeding foreign competitors with raw material which constitute our great riches.

"Since our advent to power we have put into effect a policy to the contrary effect not only in respect to Crown lands, but also to privately owned forestry concessions. It is to put this policy into operation that we passed a law saying that all who export wood to the United States, except colonists and farmers, must obtain a permit, even when the wood is from private lands. When we made an exchange with the Brown Corporation by which that company ceded freehold lands which they owned in the Gaspe peninsula and we gave certain lands in exchange, we made a stipulation in the contract to absolutely prohibit any export. Furthermore, we have declared that we will not permit the construction of new mills so long as localities plunged in misery because of the closing of existing mills are not given work through the opening of replacement mills, or reopening of mills which were closed.

"Consequently," continued the Premier, "if the Consolidated Paper Company, which is in touch with our policy, and to which we have declared it many times, telling them formally that it is the intention to apply it rigorously—is negotiating with foreign interests, the result of which will be construction of a new mill and export of wood to supply competitors in a market now open to us, it is showing audacity, and the Government will not tolerate it. We possess means of action which the company should know, and we will put them into application without delay, and with energy, and without pity, if the authorities of this company do not conform to the formal instructions of a Government which received a mandate from the people, a very express mandate."

The Premier added: "We are ready and anxious to receive honest foreign capital which wishes to develop our natural resources, and we will guarantee it full and equitable justice, and even generous justice; but between utilizing capital and the grabbing our domain there is a margin as wide as that between a sane administration and an evil administration.

which means much the same as the margin between the present administration with the former administration."

Mr. Duplessis concluded: "So, there can never be question of alienation of our patrimony, especially a patrimony which consists of an important strategic outpost."

N. B. Pulp Mill Shut Down

From St. George, N. B., it is announced that the St. George Pulp and Paper Company's mill has been shut down, throwing 70 to 80 men out of employment. The shut-down, said to be for an indefinite period, resulted from a slump in demand for ground wood pulp. Dismantling of equipment is under way but production could be resumed on short notice. The mill has a capacity of 100,000 lbs. of ground wood pulp daily.

Bowater's Newfoundland Plan

From Newfoundland comes the news that, in the light of opinion and advice invited from the public, negotiations for the establishment of a $6,000,000 sulphite pulp mill in the Gander area of Newfoundland by the Bowater-Lloyd Company, of London, Eng., has been deferred pending further study.

Under the tentative agreement, subject to final approval on both sides, mill is to have a capacity of 226 tons daily. Full time payrolls for mill workers would total about $350,000, with loggers' wages approximately $575,000 yearly.

The Bowater Co. would be granted the right to export unmanufactured pulp wood equal to three-quarters of the mill's capacity in addition to 120,000 cords under short-term agreement now in force.

With the exception of a few of the old Reid Development Co. holdings, the company would be subject to income tax regulations and would be given several concessions on customs duties on equipment and construction material.

The plan also would provide for operations in Labrador, where 3,000 miles of timber-land would be leased at $2 a square mile, with royalties to be paid on the wood exported.

In some quarters it is contended that the company should be given the right to export only a limited amount of wood, while the royalties and stumpage dues should be on a comparative basis with those in force in the Canadian provinces. There is also objection to the proposed granting of power development rights.

To Be Superintendent at Lebanon

LEBANON, Ore., December 8, 1937—Paul Middlebrook, who filled the position vacated two months ago by Dan Dupuis as superintendent of the Crown Willamette paper plant in Lebanon, has been named permanent superintendent, it was announced recently.

Mr. Middlebrook took the post as acting manager when Mr. Dupuis left for a new position as general manager of a paper mill near Quebec.

Mr. Middlebrook started in the paper business as a laborer in a Los Angeles mill, then owned by the Floriston Pulp and Paper Company. In succeeding years he served in executive capacities in mills at Floriston, Calif., Camas, West Linn and Oregon City, and in the Crown Willamette offices at Los Angeles, San Francisco and Portland.

Indianapolis Demand Slow

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, IND., December 13, 1937.—If one were looking for a bright spot in the local paper market, about the only one available would be the continued firm prices on virtually all lines. Some consolation might be had from the continued demand for newsprint, but in practically every other item demand shows a lethargy that is somewhat discouraging for this time of the year. Nor does the local trade expect much impetus until after inventory.

Demand last week was about on the same level as the week before and some jobbers believe the recession has been checked to some extent. Consumers have low stocks in all lines and buying is strictly on a hand to mouth basis and likely will remain so until after the first of the year. Largely because of business conditions a lot of catalogue work and direct mail literature which had been planned has been held up and this has had an ill effect on demand for books, covers and ledgers.

Box manufacturers report much the same situation as other lines. Box buyers, notably automobile accessory, hardware, textile and similar lines, are buying only for immediate requirements. Stocks in warehouses are low and production with the local box factories is about fifty per cent of normal. There has been some demand from the confectionery interests, but even this is below normal.

Abnormally cold weather during the last week caused a virtual cessation in demand for building papers. Near-zero weather caused an effectual halt to operations and retailers were not in the market. There was some demand for wrapping paper and bags, but even this was low due to the fact that Christmas buying had not really begun last week. Some improvement is expected this week, however.

In the paper stock field the rag market is poor, but for the most part prices are holding up. In the waste paper field, business is dull but prices are firmly held with a slight improvement on the best grades.

Swedish Pulp Well Sold Ahead

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 15, 1937.—The remarkable place attained in Swedish industry and commerce was fully maintained during the third quarter of the year, industrial production advancing into new record high ground each month. The production index of the pulp and paper group remained at 119 for July, rising to 120 in August, and to 121 in September. The corresponding figures for the general index were 120, 121, and 122 (135 monthly average equals 100).

During the greater portion of this period the Swedish pulp market was very quiet partly due to the fact that production for 1937 and 1938 was practically sold out, and partly to the fact that business always declines during the summer holiday months. Prices remained steady with a slight upward trend noticeable. The lack of selling activity which marked the third quarter made it somewhat difficult to estimate the real price situation. Toward the end of the quarter interest in 1939 business became somewhat more active, particularly in sulphite pulp.

Financial News of Pulp and Paper Industry

Dennison Recapitalization Plan Abandoned — Great Lakes Paper Co. Shows Gain In Second Half of Year — Dryden Paper Reports Larger Net Profit—Consolidated's Taxes Help Meet City's Payroll—Other News.

New York Stock Exchange

High, Low and Last for the Week Ending December 15, 1937

	High	Low	Last
Armstrong Cork Co.	40¾	37	38¼
Celotex Corp.	25½	25	25½
Celotex Corp., pf.	63	63	63
Certain-Teed Products Corp.	8¾	7½	8
Certain-Teed Products Corp., pf.	34	28½	29
Champion Paper & Fibre Co.	30½	29	30
Congoleum-Nairn Co.	23½	21½	22
Container Corp. of Amer.	14	12¾	12¾
Continental-Diamond Fibre Co.	8	7⅝	7⅝
Crown-Zellerbach Co.	12⅛	10⅞	11
Crown-Zellerbach Co., pf.	68⅛	64½	65
Flintkote Co.	18⅜	15½	16
Robert Gair	5	3⅞	3⅞
Robert Gair, pf.	21½	14½	14⅞
International Paper & Power	10⅞	9½	9½
International Paper & Power, pf.	44⅜	39¼	39½
Johns-Manville Corp.	84	80¾	82¼
Johns-Manville Corp., pf.	122	122	122
Kimberly-Clark Corp.	21	20	20
Masonite Corp., pf.	34	32½	33½
Mead Corp.	13¾	13	13
Mead Corp., pf.	56	55	55
Paraffine Companies, Inc.	39	37	39
Ruberoid Co.	23	21	21¼
Scott Paper Co.	39¼	36½	37
Sutherland Paper Co.	20⅞	20½	20½
Union Bag & Paper Corp.	9⅞	9	9½
United Paperboard Co.	5¼	4½	4½
U. S. Gypsum Co.	73	63¼	66⅜
U. S. Gypsum Co., pf.	165	163	165

New York Curb Exchange

High, Low and Last for the Week Ending December 15, 1937

	High	Low	Last
American Box Board Co.	9¼	8⅝	8⅝
Brown Co., pf.	30½	25	26
Great Northern Paper	31½	31½	31½
St. Regis Paper Co., pf.	3¾	3⅜	3⅜
Taggart Corp.	4¾	4⅜	4½

Dennison Capital Plan Abandoned

The plan of recapitalization proposed by the Dennison Manufacturing Company on May 1, last, has been abandoned as a result of the failure of sufficient shares to vote in favor of its adoption, it was announced today by Henry S. Dennison, president.

"An insufficient number of shares of preferred stock have assented to make it possible to adopt the plan," he said. "As the present business outlook is uncertain and the earnings for the year may be less favorable than we anticipated when the plan was submitted in May, it appears inexpedient to ask the stockholders to consider further the present plan or modifications of it. For these reasons the plan is abandoned.

"The problems of accumulated dividends, building up of surplus, and resumption of current dividends are still unsolved. These must be met as earnings permit, conditioned by financial safety and the maintenance of the competitive stregth of the company."

Great Lakes Paper Gains

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 13, 1937.—The business of Great Lakes Paper Company, in the second half of this year has more than maintained the improvement noted in the first six months of 1937, it is reported by C. H. Carlisle, president. Mr. Carlisle had already indicated that there is every likelihood that net earnings for the current year after full depreciation and for bond interest may be sufficient to cover dividends on the outstanding preferred "A" and "B" issued. Mr. Carlisle views the recent recession in demand as a usual and temporary condition, and believes that consumption for 1938 will be found to be of satisfactory proportions. A chief source of danger would be a repetition of that development which accounted for much of the industry's ills during the past decade, namely, unwise development of over-productive capacity. Memory of the last, he feels, may serve to check such a tendency.

Dryden Paper Earnings Rise

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 13, 1937.—The Dryden Paper Company with mills at Dryden, Ont., has reported net earnings of $188,838 for the fiscal year ending Sept. 30. The figure, calculated before deducting depreciation, depletion and taxes, but after bond interest, compared with $77,556 for the previous year. After all charges had been subtracted, the company announced net profit of $35,724 before income tax. The profit amounted to about 24 cents a share on the common, compared with 23 cents the year before. The balance sheet listed current assets at $627,338 against current liabilities of $66,-801. The working capital of $560,537 compares with $518,454 for 1935-6.

Mill Taxes Meet a City's Payroll

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 13, 1937.—Taxes of the Consolidated Water Power and Paper Company amounting to $15,581.37 reached the city treasurer of Stevens Point, Wis., just in time to enable the city to meet its November payrolls from an otherwise empty treasury. The taxes were paid to the state covering all Consolidated operations, and Stevens Point's share was remitted by the state treasurer. The city also received $14,471 from the Wisconsin Public Service Corporation.

Hoberg Mills Profits Up

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 13, 1937.—Hoberg Paper Mills, Inc., Green Bay, Wis., earned a profit of $290,213 for the 12-month period ending October 31, according to a report issued last week. The income for the previous year for the 12-month period ending December 31, 1936 was $148,171.

Crystal Tissue Co. to Pay Extra

The Crystal Tissue Company has declared an extra dividend of 12½ cents a share on the common stock, in addition to the usual quarterly disbursement of 12½ cents, both payable on December 20.

R. T. Vanderbilt Co. Completes Laboratory

For many years the R. T. Vanderbilt Company, Inc., 230 Park avenue, New York, has furnished laboratory service to the pulp and paper industry. The first building of the recently completed laboratory group was built in 1929 at East Norwalk, Conn., to provide a modern laboratory service for the paper, paint, rubber and ceramic industries. The continued expansion of the company necessitated the erection of a new building in 1936, in which the paper and paint department is now installed.

The buildings are of two stories, in the Georgian style of architecture and of brick, concrete and steel construction. The floor area is 21,000 square feet and the buildings represent an investment of approximately half a million dollars.

The paper department on the second floor of the new building furnishes a service for the development of new products in the pulp and paper industry, service work, testing and the control and improvement of the Vanderbilt products, which include clay, a pure titanium dioxide, known as "Rayox", etc.

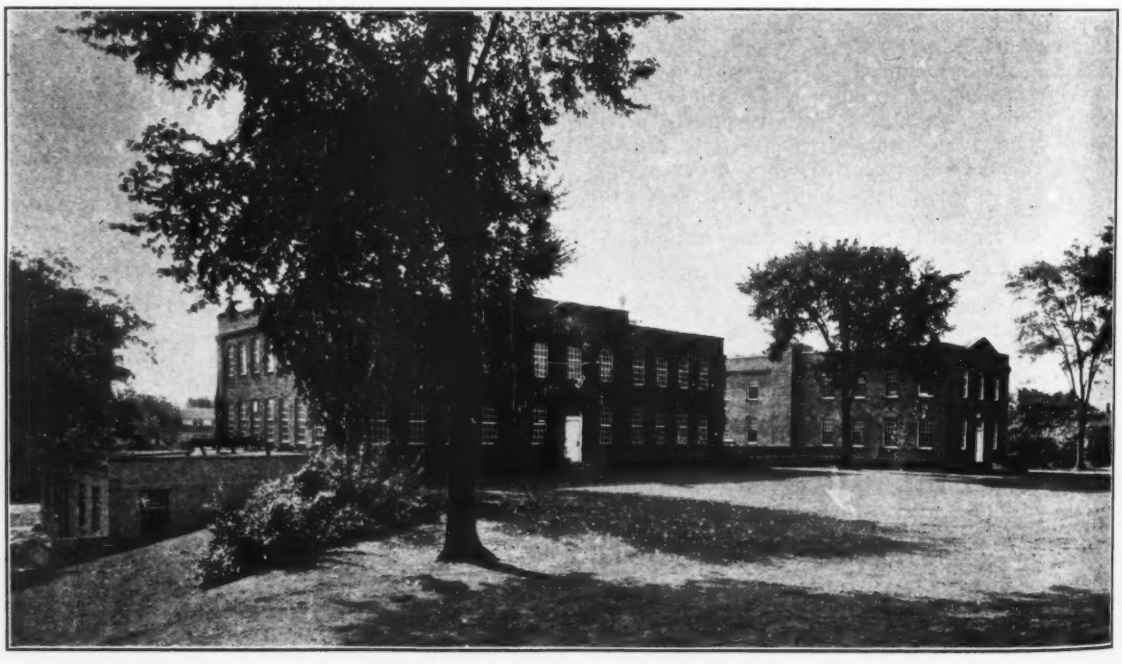
The equipment includes a modern chemistry laboratory, a controlled temperature and humidity room and the latest apparatus for the physical testing of paper. By means of special instruments the various properties of papers, such as weight, tensile, stretch, stiffness, opacity, porosity, smoothness, fold, tear, bursting strength, brightness, color and calipering are accurately determined under controlled temperature and humidity.

The various items of equipment in the paper department include the following: Schopper Tensile Strength and Stretch Tester, Standard Folding Endurance Tester, and Precision Micrometer, by Testing Machines, Inc.; Suvant Stiffness Tester, by Wilson Mechanical Instrument Company; Westinghouse Transometer, for opacity, by Westinghouse Electric and Manufacturing Company; Gurley Densometer, for porosity, by W. & L. E. Gurley; Williams Smoothness Tester, by Williams Apparatus Company; Elmendorf Tear Tester, by Thwing-Albert Instrument Company; Mullen Tester, by B. F. Perkins & Son, Inc.; Brightness and Color Analyzer, by Higgins, which is a comparatively new item of equipment. Many of these instruments are standard equipment in paper mills. Other equipment includes the Fade-O-Meter, by Atlas Electric Devices Company, for testing for light fastness. The trial testing of coatings are made on a laboratory coating machine, equipped with a coating color application unit or press, with electrically heated driers and reel. Calendering is done on a small B. F. Perkins calender, with variable drive from 50 to 300 feet per minute.

The black and white and color printing qualities of papers are tested on a Vandercook, Inc., proving press. Other items of equipment comprise a Laboratory Beater made by Noble & Wood, a Williams Freeness Tester for determining the freeness of pulp, and British Standard sheet making equipment.

In the chemical laboratory, 70 feet by 30 feet, the latest equipment has been installed. Distilled water is provided by a Barnstead Still and stored in Monel Metal tanks. A semi-commercial mixing plant, with tanks and agitators, heated with direct steam, and a Lancaster Disperser, for testing coating solutions, are also in the basement.

The paper department is under the management of C. H. Champion, assisted by J. D. Dickson, Jr., R. E. Harter and Lawrence Lynd, of the sales division. F. H. Denham is the technical director of the paper department, assisted by William Craig, Robert Higgins, Lawrence Johnson and Herman Fullin.



Isaac Gilman Is Given Testimonial Dinner

More than 400 leaders in the paper, pulp, bags and twine industries contributed and pledged $26,310 to the $6,250,000 New York-Brooklyn Federation Campaign at a dinner held at the Hotel Commodore on Wednesday of last week in tribute to Isaac Gilman, head of the I. Gilman Company. Mr. Gilman, who is celebrating this year the "golden anniversary" of his entry into the paper manufacturing business, was lauded by several speakers as a business leader and champion of great social and philanthropic causes.

Henry Nias, chairman of the Paper Industries Division of the combined Federations and head of the Lily Tulip Cup Corporation, was the first speaker. He described the start of Mr. Gilman's career fifty years ago when he ran a small, one-man enterprise at Lafayette and Canal Streets. From that beginning, Mr. Gilman's firm has grown to be one of the most important paper-manufacturing houses in America, with Mr. Gilman enjoying the unique distinction of having a town in Vermont, where Gilman company pulp, Kraft bags and Kraft wrapping paper are manufactured, named for him in his lifetime.

Alfred Bleyer, of Alfred Bleyer & Co., lifelong friend of the guest of honor, was toastmaster and introduced as speakers Judge Jonah J. Goldstein, president of the Grand Street Boys' Association and former chairman of the Speakers Bureau of Federation, and B. Charney Vladeck, general manager of the Jewish Daily Forward, who was recently elected Councilman for Manhattan.

Judge Goldstein described the work of the 116 institutions affiliated with the two Federations and recounted the need for the merger of the New York and Brooklyn Federations in a joint campaign.

Mr. Nias, as chairman of the Paper Industries Division of Federation, cited some of the same facts in appealing for generous support of the social welfare program of the two Federations.

"We are particularly gratified that so eminent a figure as Mr. Gilman is seated at the head of the table as guest of honor," he said. "For fifty years he has been at the forefront of our industry and for the past twenty years he has been leader of the pulp and paper group of Federation, and one of its most enthusiastic and indefatigable workers."

Mr. Bleyer, in describing "the horse and buggy days" when he first made Mr. Gilman's acquaintance, recounted some of the personal acts of charity which Mr. Gilman carried on.

Mr. Vladeck, in touching personal tribute, dwelt on the notable accomplishments of Mr. Gilman in behalf of the institutions affiliated with the two Federations.

At the close of the dinner, Mr. Gilman was presented with a scroll on which was inscribed a glowing account of his various business and philanthropic accomplishments.

The sponsoring committee of 125 which helped arrange the testimonial dinner was headed by General James E. Harbord. Other outstanding committeemen included J. David Stern, publisher of the New York Post; Mr. Vladeck, Israel Friedkin, publisher of the Jewish Morning Journal; Dr. Louis J. Ladin, Borough President Samuel Levy and Dr. Nathan Ratnoff.

Sol Ash was co-chairman with Mr. Bleyer of the dinner committee. Other chairmen and co-chairmen of trade units, who were thanked by Mr. Bleyer for their share in making the dinner a success, included Henry Kurniker, chairman of arrangements; Maurice Rosenfeld and Jacob Schorsch, associate chairmen; pulp group—Louis Calder, Morris Gintzler, D. Samuel Gottesman, Harry Hughes and Maurice Londan, co-chairmen; paper bag group—Walter D. Krissel, Benjamin Mintz, Al Newman, William Salzman, and Heyman Schreier, co-chairmen; coarse paper group—W. Norman Frenkel, Jacob P. Galewitz, Herbert J. Grey, Morris Heller, Benjamin Kushell, M. M. Marcuse, Jules Stille, George Stoll, Jack Weill and Max Weill, co-chairmen.

Cosmopolitan association—David Kasson and M. Schwartzapel, co-chairmen; metropolitan association—Michael Posner, Louis Silfen, Arthur Stein, co-chairmen; paper stock—Abner Koplik, chairman; export—Bernard Sharp, chairman; paper board—Abraham Herman and Jack Sincoff, co-chairmen; Specialties—William Eisner, chairman; Abraham Mazer, treasurer.

Mills Report Backlog Orders Low

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., December 13, 1937.—Generally speaking, the wholesale paper trade in Ontario is draggy and sales volume light. A few lines of paper are selling fairly well but there is not the total volume of sales the trade would like to see. Quiet times in both mill and distributing circles were encountered at the end of the summer and conditions have been somewhat slow in correcting themselves. Not a few of the wholesale paper houses stocked up pretty well during the summer sensing higher quotations but these stocks, chiefly of fine paper, are pretty well cleared up now and there should now be an opportunity for the mills to place some sizeable orders. As yet, however, they are not doing this and mills for the most part report orders only a slight distance ahead of the machines. Neither the wholesalers nor the mills have been partaking in the general holiday spirit to any extent and it is not anticipated that conditions will improve before the turn of the year. There is, however, a feeling of optimism regarding the outlook for the New Year when, it is believed, volume of sales will be pretty well back again to what they were a few months ago. This note of optimism is encouraged to some extent by the better outlook on the Canadian stock exchanges and improved outlook in the United States.

While these remarks appertain chiefly to the fine paper market, they also apply to a slightly lesser degree to the coarse paper market which has been show a slight improvement of late. In the line of glassine, waxing and greaseproof, there has been a well sustained demand for some months and there is a slightly better call for paper bags. Paper converting lines are still somewhat draggy under a light demand for envelopes and general stationery. Tissue paper mills are quite busy and do not appear to have suffered during the recent quiet months.

Obituary

James Beveridge

James Beveridge, one of the outstanding pulp and paper technologists of the past two generations died at his home in Richmond, Va., on November 16th. Purial was at City Point, Va. He was born at Springfield Fife, Scotland on April 7, 1857, and though in his 81st year was active to the very moment of his sudden passing. Only this summer he visited England and Scotland.

Mr. Beveridge was educated in Glasgow, Scotland as a chemical engineer, and began his business career in the manufacture of heavy chemicals. During these years he spent some time in Russia. About 1887 he joined Thos. Owen & Co., Ltd. Ely Paper Mills in Wales as chemist. It was here that he first saw

JAMES BEVERIDGE

chemical wood pulp. This aroused his interest and he started to experiment in this field.

Meanwhile the Ekman Pulp and Paper Company had established a sulphite pulp and paper mill at Northfleet, Kent, England, and when Ekman returned to the continent Mr. Beveridge took his place with that company. At Northfleet he initiated several new ideas in the making of sulphite pulp and the bleaching of ground wood pulp, and also acted as consultant for a bleached straw pulp mill in Holland.

When Ekman returned to England Mr. Beveridge resumed his connection with Thos. Owen & Co., Ltd., who sent him out to Sweden to rebuild the Hjerpen Pulp Mills, which they owned and which had recently burned. He remained there about four years.

On returning to England Mr. Beveridge established a consulting business with extensive paper mill connections, and which took him to Newfoundland and Canada in 1897. An important step was taken in 1899 when he became assistant to Captain Partington (later Lord Doverdale), the well known head of the Olive & Partington Company, and the Kellner Partington Pulp and Paper Company, with several mills in England, Norway, Sweden and Austria. Partington operated sulphite pulp mills in connection with his paper mills at Glossop and Barrow-in-Furness in England.

In 1900, Partington financed the building of the Cushing Sulphite Pulp Mill at Fairville, St. John, N. B. When this mill went into operation Mr. Beveridge became managing director and the company was organized as the Edward Partington Pulp and Paper Company, Ltd. After operating this mill for several years, Mr. Beveridge and the three Keyes Brothers of the Nashua River Paper Company, East Pepperall, Mass., bought the Maritime Sulphite Fibre Company's mill at Chatham, N. B., and changed the name to the Miramichi Pulp and Paper Company. He disposed of his interest in this mill, and in 1908 built the New Brunswick Pulp and Paper Company kraft pulp and paper mill at Millerton, N. B. There were two machines, a Fourdrinier and a Yankee, which produced the first M. G. (Machine Glazed) paper made in Canada. Mr. Beveridge was president and general manager.

The plant was destroyed by fire in 1915, and war time prevented the financing for rebuilding, so he took over the William Cauldwell Paper Company in Montreal, and changed the name to the Beveridge Paper Company.

But Mr. Beveridge was at heart an operator and returned to active manufacturing in March 1920, when he became connected with the design and construction of the Hummell-Ross Fibre Corporation's Kraft Pulp and Paper Mill at Hopewell, Va. He retired from this company in 1923, and took up his residence in Richmond, Va., and carried on a consulting business; he remained remarkably active to the very end of his life.

Along with his mill operations, he was a pioneer in the manufacture of chemical pulp from wood, and was awarded a number of patents for the development of chemical manufacturing processes, and design of equipment.

James Beveridge was a member of A. F. and A. M. and was a charter member of the Society of Chemical Industry; he attended the 50th anniversary of the Society in London in 1931, and was presented with a bronze plaque. He contributed many scientific articles to the society's journal and other publications.

His wide experience was the basis of his "Paper Maker's Pocket Book," which is now in its third edition. He also contributed to the chapter on the preparation of straw, and Esparto pulps, etc., in the Pulp and Paper Industry's text book, "The Manufacture of Pulp and Paper," as his contribution to this effort to educate young pulp and paper makers.

His hobbies were the collection of pictures, and ivories, of which he had assembled a fine collection; he was also a keen philatelist. He was a member of the Episcopal Church. Mrs. Beveridge died in 1921 and Mr. Beveridge is survived by one sister, Mrs. H. Mathers of Edinburgh, Scotland; two daughters, Miss Margaret, and Miss A. Beatrice, of Richmond, Va., four sons, James Brookes and Laurence of Montreal, F. Norman of Fernandina, Fla., and John F. of Hamilton. Another son, Donald Gordon, died January 4, 1936. James Brookes Beveridge is general manager of the Lake Sulphite Pulp Company, Ltd., which is rebuilding the 250 ton bleached sulphite pulp mill of Red Rock near Wapigan and F. Norman Beveridge is general superintendent of Kraft Corporation of America's new mill at Fernandina, Fla.

"Printing for Production"

In a booklet under the above title the Chambon Corporation, of Garfield, N. J., describe their Chambon and Champlain printing machines for all types of package and specialty printing.

Salesmen Hold Weekly Luncheon

A note of novelty was introduced at the weekly luncheon of the Salesmen's Association of the Paper Industry, held at the Hotel Lexington, New York, on December 13, by the guest speaker representing a new publication called the *Rising Tide*.

The objective of this weekly periodical which was first placed on sale on the newsstands in this city, December 14, is well told in a full page illustration in the current issue—"The need of the nations is for true patriots with a personal experience of Jesus Christ, who will bring about the greatest revolution of all time, whereby the Cross of Christ will transform the world."

In other words, the objective of this ultra-modern periodical is to portray or suggest to the reader by means of pictures, the spiritual and moral values inherent in the news events of today. This is done almost entirely by means of full pages of photographs, with explanatory captions, printed by the photogravure process.

The editors state: "The editors have but one wish, that these pages can serve as a rallying point for the constructive forces of the country, perhaps an instrument of a united Christian front, in which every party and point of view can have a place. The publication is appearing this month in ten countries, nine languages and one million copies."

The current copy of *Rising Tide* carries this acknowledgment: "The editors of *Rising Tide* wish to thank all departments of Hagstrom Company, the Oxford Paper Company and R. R. Donnelly & Sons Company, for their unstinted work and whole-hearted cooperation. They express their indebtedness to the many publishers, editors and printers who have given so generously of their time and experience. They wish also to thank *Life* and the other photo-magazines which have led the way in the art of picture presentation."

Rising Tide is sponsored by the Oxford Group and published at 61 Gramercy Park, New York City, and at King Edward Hotel, Toronto, Canada. The subscription rate is seven copies for one dollar, when mailed; single copies 10 cents, plus 5 cents for postage, if mailed.

Collins Mfg. Co. Files in Bankruptcy

The Collins Manufacturing Company of North Wilbraham, Mass., for half a century engaged in manufacturing paper, and employing 150 workers, seeks to reorganize its business under sect. 77B of the bankruptcy act in a petition filed in the federal district court. Total assets and liabilities were reported ae the same figure, $649,252.

The assets include accounts receivable less reserve, $19,808; inventory, $191,834, and fixed assets less reserve, $453,658. The liiabilities include notes payable, $611,500, and accounts payable, $20,109.

Maurice London to Start Wood Pulp Business

Maurice London, for a long number of years with the Lagerloef Trading Company, Inc., has left that concern. Mr. London will continue in the wood pulp business and expects shortly to be able to announce his definite plans. His address will continue the same as before—52 Vanderbilt Avenue, New York City, where he has opened an office on the eighth floor. His telephone number is Murray Hill 6-1856.

Patten Paper Co. To Be Sold

APPLETON, Wis., December 13, 1937.—Liquidation of the assets of the Patten Paper Company, Ltd., Appleton, Wis., is to take the form of a sheriff's sale at 10 o'clock on the morning of January 21, 1938 at the court house at Appleton, according to a legal notice published last week. The auction sale follows the granting of a judgment of foreclosure by the circuit court of Outagamie County, Wisconsin, to the Aid Association for Lutherans, holder of a substantial mortgage on the property.

Included in the sale will be the company's mill properties, the real estate, water power and all machinery and equipment. Trade-marks and Patents also are listed for sale.

The Patten mill was one of the earliest to be established in the Fox River Valley. Its operations were profitable even during the economic depression, but difficulties arose when its president, Judson G. Rosebush, lost the controlling interest in the Northern Paper Mills, Green Bay, Wis., while he was its vice-president and general manager. Surplus funds of the Patten mill had been used to acquire Northern stock. Reorganization was attempted under Section 77-B of the federal bankruptcy laws, but consent of the majority of creditors could not be obtained to the plan. A deal also fell through for sale of the controlling stock of the Northern Paper Mills to a syndicate of financial men, funds of which would have been used to rehabilitate the Patten mill. A court order permitting liquidation was finally requested by the trustee, Paul V. Cary, attorney.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 15.—The Government Printing Office has received the following bids for 28,000 pounds (100,000 sheets) of super purified wood tag board; Whitaker Paper Company, 8.08 cents; R. P. Andrews Paper Company, 7.2 cents; Reese & Reese, Inc., 7 cents; Barton, Duer & Koch Paper Company, 7.95 cents; Enterprise Paper Company, 7.74 cents less 2 per cent.

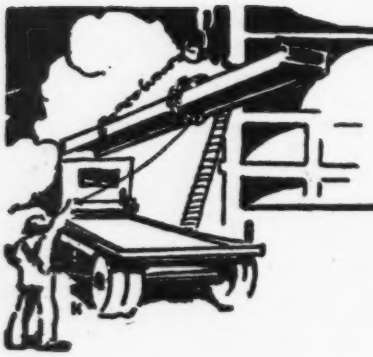
For 6,000 pounds (4,800 sheets) of binder's board; R. P. Andrews Paper Company, 5.2 cents; and Barton, Duer & Koch Paper Company, 5.35 cents.

For 36,000 pounds (12,960 sheets) of binder's board; Mathers-Lamm Paper Company, 4.14 cents; Barton, Duer & Koch Paper Company, 5.2 cents; and R. P. Andrews Paper Company, 5.2 cents.

Gilbert Paper Co. Gets Plaque

A very pleasant aftermath of the Gilbert Paper Company's fiftieth anniversary party last July took the form of a plaque of gilt bronze on teakwood, made by the Gorham Company, and presented to the Gilbert Paper Company by a number of their friends in the industry.

The plaque is very beautifully engraved with the names of customers and the written signatures of the executives of the concerns in question. It is hanging in the reception room of the Gilbert Paper Company's office at Menasha, Wis., and will be a constant reminder of the loyalty and friendship of many of the leaders in the paper merchant field in the United States for the Gilbert Paper Company on its Fiftieth Anniversary.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, of Pulp and Paper Mills

General Construction News

Jacksonville, Fla.—The National Container Corporation, Review and Borden avenues, Long Island City, New York, N. Y., manufacturer of corrugated boxes and containers, has awarded general contract to the Merritt-Chapman & Scott Corporation, 17 Battery place, New York, for another building at new pulp and paper mill at Jacksonville, now in course of erection, to be of one and multi-story type, equipped as a recovery unit. It is estimated to cost close to $100,000, including equipment. Construction will be carried out in conjunction with work on main mill, previously referred to in these columns, to be available for service at the time the plant is ready in 1938. New mill will be equipped for a rated capacity of about 200 tons of kraft paper per day and is estimated to cost $3,260,000, with machinery. Project also will include a converting plant unit for the production of boxes and containers, estimated to cost in excess of $100,000, with machinery. Samuel Kipnis is president. Johnson & Wierk, Inc., New York, are the consulting engineers.

Atlanta, Ga.—The O. B. Andrews Company, Spring and Packard streets, S. W., manufacturer of corrugated paper boxes and containers, plans early rebuilding of portion of three-story plant, recently destroyed by fire with loss estimated close to $30,000, including equipment. Reconstruction is expected to approximate a like sum. Main offices of company are at Chattanooga, Tenn., where company operates a mill for the production of corrugated board, chip and news board, etc.

Middletown, Ohio—The Crystal Tissue Company, manufacturer of tissue, kraft and other paper stocks, is making call for bids for general erection of new power house at mill, recently referred to in these columns, to be one-story 49 x 56 feet, adjoining present unit. It is expected to begin work on superstructure early in 1938. As previously noted, awards for turbo-generator unit, condenser and certain other equipment have been made. Walter I. Barrows, Reibold Building, Dayton, Ohio, is consulting engineer. No estimate of cost has been announced.

Hamden, Conn.—The New Haven Paper Box Company, 214 East street, New Haven, Conn., manufacturer of paper boxes and containers, has acquired property at the corner of Welton and Benton streets, Hamden, through its president, Benjamin Ledewitz, and will use it as a site for a new plant. Preliminary plans for building are under consideration. It is proposed to proceed with erection early next year, when size and details will be determined.

Elizabeth, N. J.—Louis Verrone, Inc., 209-13 Charlton street, Newark, N. J., dealer in paper-making supplies, waste paper, etc., has leased a portion of main factory formerly occupied by the Bronze Powder Company at 801-11 Magnolia avenue, Elizabeth, totaling about 32,000 square feet of floor space, and will remodel and improve for new plant. Company will occupy at early date.

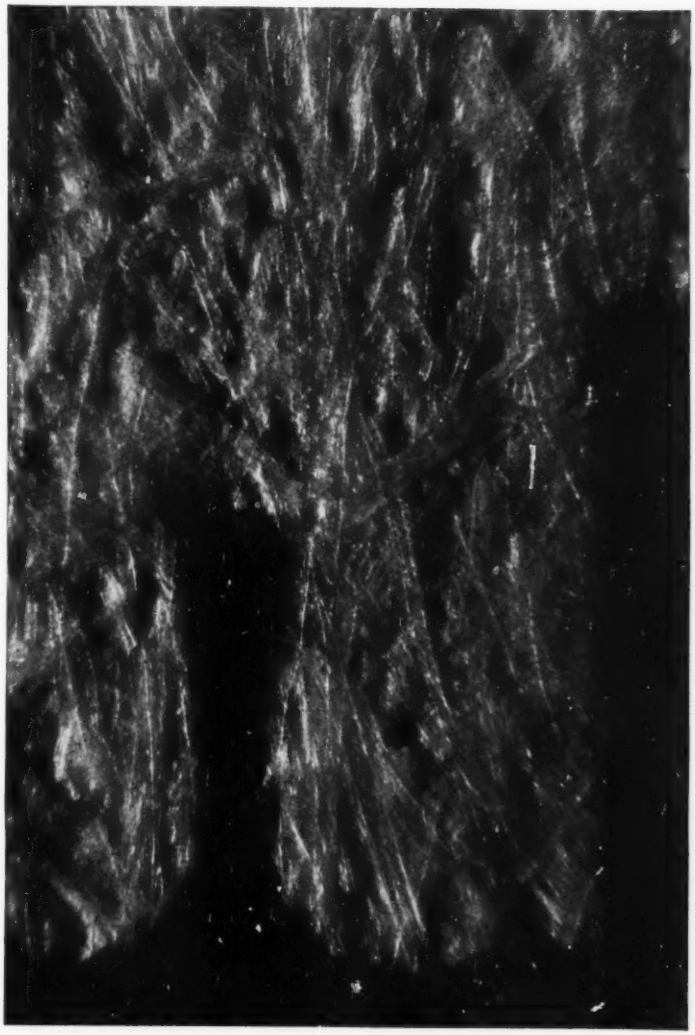
White Pigeon, Mich.—The Eddy Paper Corporation, Three Rivers, Mich., manufacturer of folding box board, bristol board and kindred paper stocks, has approved plans for new power house at branch mill at White Pigeon and will proceed with erection at once. General building contract has been awarded to the F. Shoemaker Company, Sturgis, Mich. It is reported to cost over $50,000, with boilers and other equipment.

Elkhart, Ind.—The American Coating Mills, Inc., Division street, manufacturer of folding boxboard and kindred paper products, has work under way on new addition to mill, to be one-story, 100 x 175 feet, for which general contract recently was let to the Sollitt Construction Company, Myrtle street, Elkhart, previously noted in these columns. New unit will be used for storage and distributing division and is reported to cost approximately $40,000, with equipment. It will be ready for service early in 1938.

Savannah, Ga.—The Union Bag and Timber Company of Georgia, Inc., a subsidiary of the Union Bag and Paper Company, Woolworth Building, New York, N. Y., has leased a tract of timber land in North Carolina and Virginia, totaling about 400,000 acres, and will develop as a source of pulp wood supply for mill of parent company at Savannah, Ga. A portion of the tract will be placed in use in near future.

Mobile, Ala.—The National Gypsum Company, 190 Delaware avenue, Buffalo, N. Y., manufacturer of wall board and allied products, has begun the driving of piles for foundations for new mill on Mobile Bay, Mobile, to be used exclusively for the production of fiber board products for insulating service, as previously noted in these columns. The entire site for the new mill has been cleared, adjacent to the former plant of the General Cable Company, which has been acquired by the National Gypsum Company, to be used as a unit of the new plant. Superstructure for new buildings will be placed under way early in 1938. The H. K. Ferguson Company, Hanna Building, Cleveland, Ohio, is general contractor for mill, which is estimated to cost close to $1,000,000, with equipment. At a later date it is proposed to construct other mill units on adjoining land.

WHAT IS IT?



The fur of a rabbit?

A sand-trap on a golf course?

A shadow on barren land seen from the air?

NO, it is a microphotograph of a piece of paper magnified 75 times. The dark area is one corner of a letter printed on the surface.

With pictures like this, Kenwood studies finish problems for its customers. Sometimes paper carries a surface mark when it comes from the machine. What is causing it? Perhaps a felt, perhaps a wire, perhaps rough fibers in the pulp. Whatever the cause, you may be sure the guilty party has left a "finger-print" which the naked eye can not see but which the microscope reveals.

You can always bring your problems to Kenwood, knowing its laboratory is ready to help you. And you can buy Kenwood felts with confidence, knowing they are the product of more than 65 years of constant effort to serve the paper industry better.

KENWOOD WOOL PRODUCTS

F. C. HUYCK & SONS

ALBANY, N. Y.

included in original acquision of site, to be used for the production of other wall board specialties and kindred building products, estimated to cost about $1,000,000, with equipment, making a gross plant investment of $2,000,000. Jere Massey will be works manager at the plant.

Columbus, Ohio—The Sterling Paper Company, 560 South Front street, commercial paper products, has taken out a permit for new addition to storage and distributing plant, to be one-story, 50 x 62 feet. No estimate of cost has been announced. General erection contract has been let to E. Elford & Son, 555 South Front street, and work will be placed under way at once.

St. Louis, Mo.—Fire recently damaged a portion of Hunkins-Williams Building, Austin street, near Seventeenth street, occupied in part by the Missouri Paper Stock Company, commercial and other paper products, for storage and distribution, with total loss estimated at $35,000. Plans are under way for rebuilding of structure, owned by the Missouri-Pacific Railroad Company, and damage to plant of paper company will be replaced.

Poughkeepsie, N. Y.—The Western Printing and Lithographing Company, 1220 Mound avenue, Racine, Wis., manufacturer of paper specialties, has awarded contract to the Hudson Valley Builders' Structural Steel Company, 178 Cottage street, Poughkeepsie, for structural steel framing for new steam power house for branch paper-converting plant at Poughkeepsie, recently noted in these columns. Work will proceed at once. New unit is reported to cost close to $50,000, with equipment. Boiler units will be furnished by the Utica Boiler Corporation, 800 Whitesboro street, Utica, N. Y.

Hamilton, Ont.—The Consolidated Salesbook and Wax Paper Company, 800 Burlington street, East, manufacturer of commercial paper specialties, waxed and other processed papers, etc., has engaged W. J. Walsh, 128 King street, Hamilton, architect, to prepare plans for rebuilding of portion of plant recently destroyed by fire, previously referred to in these columns, with loss reported close to $200,000, including equipment. It is proposed to ask bids on general construction contract at early date. L. M. Appleford is general manager.

Durban, South Africa—The Universal Cellulose (Pty.), Ltd., Durban, has been organized by local interests, headed by E. A. Ritter, William Fleming and the Natal Estates, Ltd., with capital of $500,000, to manufacture pulp from sugar cane waste (bagasse) under a special process perfected by Mr. Ritter, noted. The pulp output from such raw material under the process is said to be capable of use for newsprint and other paper stocks, card board and similar stocks. The new company will operate in districts apart from South Africa, which territory is reserved by the Union Cellulose (Pty.) Ltd., organized for a similar purpose a few years ago and which is projecting plans for a new mill for pulp production in the Umgeni Valley district, where site has been acquired from the Durban Corporation. Proposed plant will be of large capacity and will represent an investment reported in excess of $500,000, including buildings and equipment.

New Companies, Etc.

New York, N. Y.—The Atlantic By-Products Corporation has been incorporated with capital of 200 shares of stock, no par value, to manufacture and deal in paper goods of various kinds. New company is represented by Freeman & Freeman, 233 Broadway, New York, attorneys.

Oakland, Cal.—The National Automotive Fibres, Inc., Railroad avenue and Kennedy street, Oakland, manufacturer of fiber products for automotive service, has filed notice of company incorporation under Delaware laws, with capital of $1,000,000.

Boston, Mass.—The Federal Paper Sales, 176 Federal street, has filed notice of company organization to deal in paper goods. Frank Nyross heads the company.

Wilmington, Del.—Acer & Co., Inc., has been chartered under the direction of the Corporation Trust Company, Industrial Trust Building, Wilmington, to deal in pulp and paper products, with capital of $22,500.

May Build New Pulp Mill in South

A press dispatch from Norfolk, Va., says that "Possibility that the Union Bag and Timber Company of Georgia will establish a pulp mill along the line of the Norfolk Southern Railroad in North Carolina or Virginia was revealed when Judge Luther B. Way in Federal District Court authorized the Norfolk Southern receivers to execute a lease on approximately 400,000 acres of wooded lands in the two States.

"The lands, mostly situate in Northeastern North Carolina, are substantially all the woods owned by the John L. Roper Lumber Company, which is owned by the Norfolk Southern.

"Under the terms of the proposed lease, the 400,000 acres will go to the Union Bag and Timber Company for 99 years from January 1, 1938, at an annual rental of 5 per cent of the value of the land. As the initial value is placed at $2.50 per acre, the initial annual rental would be $50,000."

Included in the lease is an option to purchase the property at the value on which rental is based. Beginning in 1950 and every 10 years thereafter, the land is to be revalued by mutual agreement or arbitration.

"A further stipulation in the lease is that on or about February 1, 1939, the lessee must start construction of a pulp and paper or board mill of at least 150 tons' daily capacity on John L. Roper Lumber Company property adjacent to tracks of the Norfolk Southern Railroad."

In order that possible objections from bondholders might be heard, Judge Way assigned the matter to George Pilcher, special master, who will hear all parties interested and report later to the court.

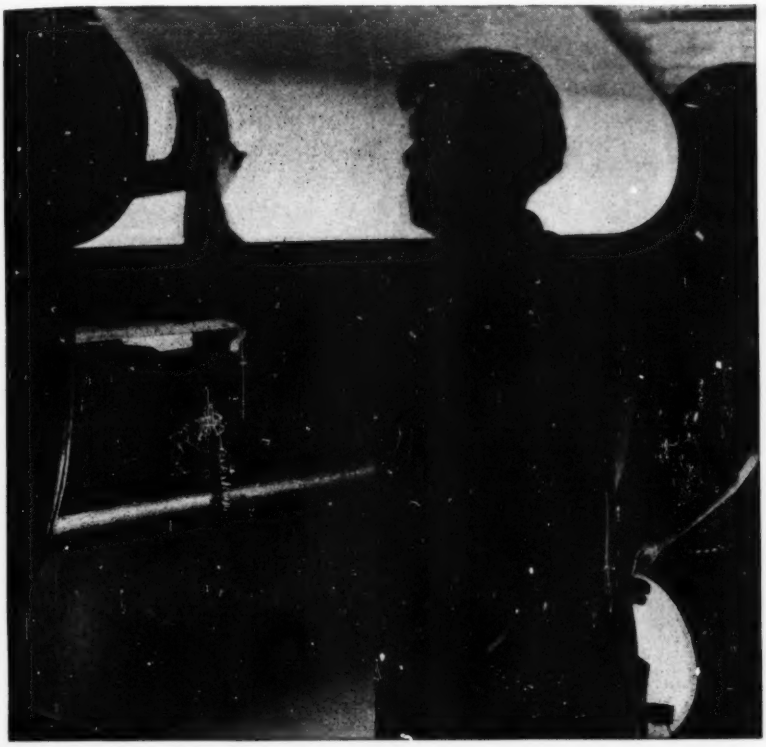
"Officials of the Norfolk Southern said that the Union Bag and Timber Company has chosen no tentative site for the mill."

Fire Burns Coal Conveyor of Parsons Mill

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., December 13, 1937.—Fire which broke out in the coal conveyor of the Parsons Paper Company in Holyoke December 9, for a time threatened serious damage to the mill. The fire department threw a curtain of water to protect the mill and the fire was brought under control. The conveyor was destroyed at a loss of about $2500.

DON'T GUESS...



Be sure

of

moisture stable

sheets and

finer finishes

In more than 107 paper mill installations costly guesswork is banished through the use of Verigraph Moisture Controllers. Moisture stable sheets are produced with automatic regularity. Finer finishes are obtained consistently. Better paper without waste and worry is the result. » » » Printers, too, appreciate the uniformity of Verigraph-Controlled paper. It assures better register on color work without the usual waste of time incurred by unstable sheets. » » » Get the whole story about this modern aid to better paper making. We will gladly send a representative to show you what Verigraph Moisture Control can do for you. » » » The Foxboro Company, 114 Neponset Avenue, Foxboro, Massachusetts, U. S. A. . . . Branch Offices in 25 Principal Cities.

FOXBORO

REG. U. S. PAT. OFF

Certified VERIGRAPH CONTROLS

RESPONSE·ACCURACY

PAPER TRADE JOURNAL
ESTABLISHED 1872

Reg. U. S. Pat. Off.

George S. Macdonald, Pres. *Joseph P. Horgan, Secy.*
Executive and Editorial Offices, 15 West 47th St., New York, N. Y.

Henry J. Berger
EDITOR

Ronald G. Macdonald
Editor Technical Section

Lynne M. Lamm
Washington Correspondent

Price, Per Copy, 10 Cents — United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CV New York, December 16, 1937 No. 25

COMING EVENTS IN THE PAPER INDUSTRY

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

INDUSTRY OFFERS A RECOVERY PLAN

In response to the request of President Roosevelt for the co-operation of industry with the Federal Government to check the current business recession, a practical plan has been made public. At the conclusion of a two-day deliberation at the Waldorf-Astoria hotel, New York, on December 8, the National Association of Manufacturers adopted a "Platform for American Industry" to guide its 5,000 members, which is the largest organization of employers in this country.

At the opening of the "Congress of American Industry", Lammot du Pont, president of E. I. du Pont De Nemours & Co., said in part: "Amid the confusion and controversy that mark the economic thinking of today, we stand in remarkable agreement on one point. American opinion seems unanimous that the chief hope for a lasting solution of our major social difficulties lies in the vigorous expansion of industry into new fields.

"Granting that the purchasing power of a part of our population is too low, it is industry alone that can produce the additional national income necessary to a measurable improvement of this condition. However, if industry is to be given the fair opportunity to work that it seeks, some definition should be given of what to those of us in industry, would constitute a fair opportunity. Give industry a reasonable degree of certainty upon which it can count in planning current and future operations. In short, lift the fog and let us see the road we must travel. At this juncture, the stabilization of tax rates over a definite period, plus a simplification of the tax structure, may be almost more important than the actual level of taxes."

The text of the platform adopted by the National Association of Manufacturers, said in part: "Better living standards for 130 million Americans result from the increasing production of goods by American manufacturers. What this country needs is business confidence. Business will move forward —producing more goods, and therefore more jobs— if it is permitted to face the future with only the natural hazards of legitimate private competition. The onward march of the American people can be resumed and continued only if American industry produces more so that all can have more."

The controlling principles embodied in the platform are as follows:

"1. The right of individual employes to seek, secure and retain employment without regard to membership or non-membership in any organization and to bargain individually.

"2. The right of employes to bargain collectively, either directly or through voluntarily chosen representatives, and to determine the form of their own organization for collective bargaining.

"3. The right of employes and employers to form organizations for their mutual advantage.

"4. The right of employes and employers to consult freely with each other.

"5. The exercise of all of these rights without coercion from any source.

"6. In the process of bargaining, whether it be collective or individual, either party should be free to accept or reject proposals made by the other, provided only that there should be a genuine effort on both sides to reach a mutually satisfactory arrangement.

"7. No employer should be penalized for failure to deal with any labor organization organizing, supporting, or maintaining a strike for illegal purposes, or by illegal means among his employes.

"8. Employment, promotion and retention of employes on the basis of merit with due regard for length of service.

"9. Legal and social responsibility of both employers and employes for their commitments and their acts."

In touching upon sound government policies the platform said in part: "Government policies should establish and maintain conditions in which trade and commerce can be conducted most successfully by private enterprise in the interest of the public. The public needs government policies which will aid busi-

ness and calls upon the government for cooperation to this end.

"American manufacturing is prosperous only when it produces and sells goods, providing jobs for workers. It sees the road to greater production and employment in improving old and developing new products, in attracting private capital for both operations and improvements, and by cooperation between employers and employes. But manufacturers find road-closed signs erected at many points. They may be summarized as:

"(a) Legislation which reduces incentive to invest funds, especially in the durable goods and construction industries. Increased flow of capital investment into private enterprise is essential to expand production and employment.

"(b) Continued uncertainty involving Federal regulation of industry beyond the field of necessary public safeguards.

"(c) Policies which have the effect of redistributing existing wealth and income instead of endeavoring to produce more national wealth and income.

"(d) Taxes which are unduly burdensome both in amount and character, which make no allowance for previous losses when taxing profits and discriminate against companies with widely fluctuating earnings, which penalizes companies burdened with debts, which restrict the amounts spent for plant expansion and improvement.

"(e) Continued unbalanced Federal budget caused by excessive government spending.

"(f) Legislation which stimulates labor controversies or the threat of such controversies; which does not protect employes against any and all coercion; which is unfair to employers and under which only they can be guilty of unfair practices.

"(g) Tariff policies which increase imports of foreign goods competing with domestic industry and labor, by extending the benefits of reciprocal tariff provisions to those not parties to the agreements, giving the benefits and getting nothing in return. Adequate tariff protection is vital to American labor; American manufacturers offers their cooperation in the endeavor to secure such protection.

"(h) Increasing government competition with private enterprise.

"(i) Increasing centralization of economic and legislative power in the hands of the Federal Government."

Sizing Paper with Rosin

In a pamphlet entitled "The Principles of Sizing Paper With Rosin," J. A. DeCew, of Process Engineers, Mount Vernon, N. Y., has endeavored to condense many years of experience in a clear and concise exposition of the rosin sizing process. The author points out that "efficient sizing is one of the important factors in producing papers of permanency, brightness, strength and pliability."

Production Ratio Report

(The statistics are based upon paper production reports to the American Paper and Pulp Association).

COMPARATIVE MONTHLY SUMMARIES

Months	1937	1936	1935	1934
January	90.3%(c)	76.1%	65.8%	.....
February	90.1%(c)	77.9%	70.0%	.....
March	90.3%(c)	76.0%	70.5%	.....
April	92.1%(c)	82.3%	70.0%	.....
May	90.6%(c)	81.6%	69.4%	.....
June	87.3%(c)	80.7%	72.3%	.....
July	81.8%(c)	77.3%	64.9%	.....
August	82.9%(c)	81.5%	70.9%	.....
September	78.6%(c)	80.5%	71.9%	58.2%
October	73.5%(c)	87.6%	75.6%	64.7%
November	61.2%(c)	88.0%	75.3%	61.7%
December	.....	85.9%	71.2%	59.6%
Year Average	.....	81.3%	70.5%	.....
Year to Date First 48 weeks	83.1%	81.1%	70.5%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1937		CORRESPONDING WEEKS, 1936	
*October 30	68.8%	October 31	89.7%
*November 6	64.3%	November 7	87.0%
*November 13	61.1%	November 14	87.6%
*November 20	62.3%	November 21	89.4%
*November 27	57.0%	November 28	87.9%
*December 4	56.5%	December 5	90.3%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
	Oct 30	Nov. 6	Nov. 13	Nov. 20	Nov. 27	Dec. 4
Ratio Limits	1937	1937	1937	1937	1937	1937
0% to 50%	103	113	146	127	176	108
51% to 100%	216	205	171	185	120	119
Total Mills Reporting	319	318	317	312	296	227

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

Paper Operating Ratios

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Months	1937	1936	1935	1934	Months	1937	1936	1935	1934
Jan.	80%(e)	61%	61%	....	July	67%(e)	69%	59%	....
Feb.	86%(e)	67%	67%	....	Aug.	74%(e)	75%	65%	....
Mar.	87%(e)	68%	67%	....	Sept.	70%(e)	76%	69%	62%
April	89%(e)	70%	61%	....	Oct.	66%(e)	82%	76%	63%
May	86%(e)	68%	61%	....	Nov.	.....	79%	70%	56%
June	75%(e)	68%	65%	....	Dec.	.....	74%	60%	52%

Week ending Oct. 30, 1937—62%
Week ending Nov. 6, 1937—56%
Week ending Nov. 13, 1937—57%
Week ending Nov. 20, 1937—56%
Week ending Nov. 27, 1937—50%
Week ending Dec. 4, 1937—50%

(e) Basic figures revised to include new members of the National Paperboard Assn.

Wrapping Paper Green Book

Continued expansion is being made in the new Wrapping Paper Green Book recently issued by the Statistical Research Division of The National Paper Trade Association. Pages have been issued to Green Book holders presenting Trade Customs on Kraft Wrapping Paper and these will be followed up from time to time with Trade Customs and other pertinent information covering all major wrapping paper lines. The aim of the association is to make this publication an invaluable reference hand book for all wrapping paper merchants, continuously serviced by the association office to keep them up to date. The form in which the reports on mill selling policies have been issued is being changed so that these reports will now appear on 8½x11 sheets so that they may be made a part of the Green Book, although they will fit any standard three-ring binder.

The Green Book is, of course, designed primarily for National Paper Trade Association members but is available to non-members at a price of $5.00 which includes future servicing.

FASTER WAYS TO REACH NEW MARKETS

WITH MATERIALS OF GREATER

DEPENDABILITY

Production cost and quality of output in the paper industry, as in all industries, depend to a great extent on the quality of the materials used. We believe your processes will benefit by the care and precision we take in the production of the paper chemicals listed below:

SIZING MATERIALS—Liquid Rosin Size in tank cars and drums, Dry Size in bags, Alwax and Waxine Sizes in drums.

SULPHATE OF ALUMINA—Produced from Bauxite mined in our own deposits in Georgia, Arkansas and South America.

CASEIN—Made with up-to-date equipment that insures the high speeds so essential in securing uniform high quality.

CHINA CLAY—Domestic Air-Floated, Water-Washed and Coating Clays; also a complete line of English Coating and Filler Clays. Bright in color—low in grit content.

AMERICAN CYANAMID & CHEMICAL CORPORATION

30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Review Of The Paper Industry Literature

Abstracts Compiled By the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson and Clarence J. West, Chairman of the Committee.

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Coating Materials

Coating of Paper. Container Corp. of America, assignees of C. E. Fawkes and C. M. Mackenzie. Brit. pat. 456,938 (Nov. 1, 1935).—Paper is coated with a nitrocellulose lacquer of high viscosity by means of a roll which rotates in the same direction of travel as the paper, but at a speed of 25 to 90 per cent of that of the paper, so that the lacquer is transferred mainly by a shearing action. A lacquer film of constant thickness is similarly fed to the applying roll by means of a secondary feeding roll. Uniformity of the film on the paper, with absence of streakiness, is maintained by regulating the viscosity of the liquor and the speed ratio of paper to applying roll. —A.P.-C.

Colloidal Calcium Carbonate. Harold R. Rafton and Arthur M. Brooks, assignors to Raffold Process Corp. U. S. pat. 2,058,503 (Oct. 27, 1936).—In treating lime with carbon dioxide in the presence of water, calcium carbonate is produced in substantially colloidal form by leading the carbon dioxide in the mixture beneath its surface, the lime being present in excess of the amount which will dissolve in the water, while maintaining the mixture at a temperature above 15°C. but below 50°C.—A.P.-C.

Stable Fiber-Treating Emulsion. Leroy A. Kramer, assignor to Victor Chemical Works. U. S. pat. 2,057,960 (Oct. 20, 1936).—An emulsion suitable for treating paper comprises a wax such as paraffin and an aqueous solution of a reaction product of casein and aluminum formate containing no free aluminum-ions. Tetralin and hexalin, etc., also may be used.—A.P.-C.

Casein Compositions for Coating, Sizing, Adhesives, Etc. Charles Schwartz, assignor to Hall Laboratories, Inc. U. S. pat. 2,064,387 (Dec. 15, 1936).—A plastic setting material adapted for various purposes contains casein together with a solubilizing agent such as lime and an alkali metal metaphosphate which serves to give a longer working life with desired viscosity to the composition.—A.P.-C.

Drying

Energy Consumption in the Drying Section of the Paper Machine. B. M. Sorokin. Bumazhnaya Prom. 15, No. 6: 42-40; No. 7-8: 76-84 (June-Aug., 1936); C. A. 31:2427.—The various methods of calculating the energy consumption are critically discussed.—C.J.W.

Device for the Drying or Moistening of Hanging Materials, Especially for Flat Materials. Tromag Trockenapparate & Maschinenbau G.m.b.H., Hersfeld. Ger. pat. 634,719 (Nov. 9, 1934).—Means for conveying the material through the canal dryer.—J.F.O.

Concerning the Damages Suffered by the Dryer Felt on the Paper Machine and a Process for the Lessening of This Injury. Ruth Werner. Wochbl. Papierfabr. 68, No. 1: 7 (Jan. 3, 1937).—The author discusses the causes for the formation of sulphuric acid in the dryer felt, and suggests the use of ammonia to neutralize this acid and thus increase the life of the felt as much as 50 per cent.—J.F.O.

Rubber-Covered Suction Roll. Albert H. Standley and Harold H. Burrows, assignors to Downingtown Manufacturing Co. U. S. pat. 2,069,118 (Jan. 26, 1937).—A suitable number of holes in the shell are countersunk at their outer ends, and plugs of rubber projecting beyond the surface of the shell are inserted in these holes; the shell is covered with a layer of soft rubber, which is then vulcanized; a layer of hard rubber is then applied and vulcanized. —A.P.-C.

Method of and Apparatus for Drying Material in Sheet or Web Form. Bernard R. Andrews. U. S. pat. 2,071,015 (Feb. 16, 1937).—A number of streams (each preferably in the form of a sheet) of gaseous conditioning material are directed against and at right angles to the substantially flat surface of the material to be conditioned, through discharge openings in a wall extending substantially parallel to the surface of the material—A.P.-C.

Suction Drum Roll Improves Paper Board. Harold L. Cramer. Paper Industry 18: 948-949 (Feb., 1937).—The merits of suction drum rolls for water removal from board are briefly indicated, and the installation at the Piedmont plant of the Robert Gair Co. is described.—A.P.-C.

Suction Apparatus for Paper Machines. James R. Happer. Brit. pat. 452,311 (Aug. 20, 1936).—The upper run of an endless chain of suction boxes

supports parts of the wire-cloth of a paper machine, the suction being produced by an electrically driven pump in each box or group of boxes, power being supplied by "live" rails.—A.P.-C.

Process and Apparatus for the Drying of Paper. Otto Merckens. Fr. pat. 802,673.—The drying cylinders are each surrounded by a wire screen or a perforated metal screen which is mounted so as to be only slightly spaced from the cylinder and to rotate therewith. Opposite the portion of the cylinder in contact with the paper web, hot, dry air is blown into the space between the cylinder and the surrounding screen. The use of felts can be dispensed with. —A.P.-C.

Factors Affecting Drier Performance. R. J. Chambers. Pulp Paper Mag. Can. 38: 154-162 (1937).—Modern condensate systems will remove air and water efficiently; the defect still remaining inside the drier shell is a surface condition beyond the influence of any existing type of evacuation system. The heat economy of reduced air flows may be overestimated. Drier performance should be compared on the basis of efficiency or steam per ton of product unless other factors such as trim and per cent moisture in the sheet entering the driers are considered simultaneously. The distribution of heat units in a typical drying operation is shown and each of the important heat uses is discussed individually. Curves are presented showing the effect, on steam flows, efficiency and capacity of altering air volume and moisture content, of the paper entering the driers. Illustrations are given of the possibility of factors away from the driers being responsible for difficulties in the driers, and changes needed in methods of operating driers in order to secure the results desired are briefly discussed.—A.P.-C.

Pulp and Paper Testing

Determination of the Cuprammonium Viscosity of Pulps According to the American Standard Method. Albert Kueng. Kunstseide 19, No. 3: 86-90 (March, 1937).—The method described is slightly modified from the TAPPI method T 206m. The time of solution is reduced to 30 minutes for bleached and 60 minutes for unbleached pulps. Solution of the pulp in cuprammonium hydroxide is carried out in an atmosphere of oxygen-free nitrogen.—C.J.W.

A New Method for the Determination of the Degree of Cooking of Sulphite Pulp. W. Nippe. Papier-Fabr. 35, No. 8: 60-64; No. 9: 65-67 (Feb. 19, 26, 1937).—The shortcomings of the methods now in use for determining the degree of cooking are briefly given; then the background for this new method which consists of the precipitation of lignin sulphonic acid by means of organic amines. Benzidine hydrochloride is used for the reaction with the lignin sulphonic acids. The various variables are all studied and curves plotted, a curve is given showing the relation between benzidine values and the chlorine number of Sieber. In conclusion, a detailed description of the procedure with tables showing the results of experiments are presented.—J.F.O.

Report of the Meeting of the Committee for the Analysis of Fiborous Materials, at the Kaiser Wilhelm Institute, Berlin Dahlem, on Dec. 9, 1936. Papier-Fabr. 35, No. 4: 29-31 (Jan. 22, 1937).—Results of chemical tests on different grades of pulps made in three different mill laboratories. Short discussion of certain points in the procedure of various tests.—J.F.O.

Concerning the Interpretation of Pulp Tests. James d'A. Clark. Paper Trade J. 104, No. 8: 146-148 (Feb. 25, 1937).—The importance of the effect of ultra fine materials in pulps, which is usually lost during testing, is discussed and its marked effect, particularly on freeness measurements, is shown. The satisfactory correlation of various freeness testers on this account appears impossible. The specific volume of test sheets is shown to be an extremely important modifying factor for test results in general and, with its aid, a much better understanding of true pulp qualities can be gained than with test results as usually presented.—A.P.-C.

Identification and Selection of Chemical Wood Pulps. V. Gruenman. Papier 40: 47-53 (Jan., 1937).—A discussion showing that the physical properties and paper making qualities of pulp are affected by variations in its chemical composition, and that paper mills should control the chemical properties of its pulp supplies.—A.P.-C.

Detection and Determination of a Few Special Impregnation Materials in Paper. Fritz Bergstaller. Papier-Fabr. 35, No. 6: 46-48; No. 7: 52-54 (Feb. 5, 12, 1937).—The author first gives a list of the natural and synthetic impregnation materials; then an outline for their detection divided into eleven parts, from appearance, odor, etc. to the action in various solutions. Methods for the determination of cellulose derivatives and rubber in its different forms are given in detail. An analytical scheme according to A. Herzog is also added.—J.F.O.

TAPPI Notes

The New England Section of the Technical Association of the Pulp and Paper Industry will meet at the Hotel Holyoke, Holyoke, Mass., Friday evening, December 17, 1937, at 6:30 p. m. The speaker will be Thomas K. Sherwood, Professor of Chemical Engineering, Massachusetts Institute of Technology who will talk on "Water Removal from Pulp and Paper." The Johns-Manville sound movie on Heat and Its Control will be shown.

John McEwan formerly of the American Tissue Mills, S. Hadley, Mass., is now manager of the Mohawk Valley Paper Company, Little Falls, N. Y.

E. S. Hinman, formerly of the P. H. Glatfelter Compay is now Director of the York County Dairy Laboratories, Spring Grove, Pa.

M. L. Downs, formerly of the Mead Corporation, Chillicothe, Ohio, is now with Thilmany Pulp & Paper Co., Kaukauna, Wis.

R. A. Campbell, formerly of National Gypsum Company is now with Cheasapeake-Camp Corp., Franklin, Va.

B. N. Segerfelt, formerly technical director of S. A. Xilolite, Padova, Italy, is now with Cartiera Vita Mayer, Milano, Italy.

H. G. Davis, formerly with the Waterfalls Paper Co., Mechanic Falls, Me., is now production manager for the Combined Locks Paper Co., Combined Locks, Wis.

Papers to be presented at the annual meeting of the Technical Association to be held at the Waldorf-Astoria Hotel, New York, N. Y., February 21-24, 1938, should be in the Secretary's office, 122 E. 42nd street, New York, by January 8, 1938.

Delaware Valley TAPPI Discusses Holocellulose

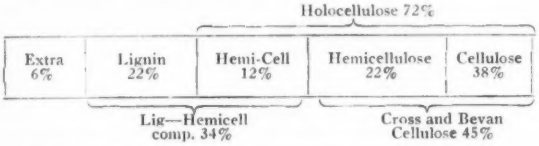
The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Friday evening, December 10, 1937. James d'A. Clark of the Scott Paper Company presided as chairman.

Plans for a dance to be held at the Bala Country Club in January were discussed and approved by those present.

On the unanimous approval of those present the Secretary was instructed to write to H. C. Schwalbe, Junior Past Chairman of the Section, to wish him good luck and continued prosperity in his new position at Chillicothe, Ohio, and to express the Section's appreciation for all that he did for the Section as a member.

The speaker of the evening was George J. Ritter of the Forest Products Laboratory, Madison, Wis., who talked on the chemical and physical concepts of holocellulose and illustrated his talk with lantern slides. Dr. Ritter pointed out that wood may be considered to be made up of 72 per cent holocellulose, 22 per cent lignin and 6 per cent of ether and water soluble extractives.

The following diagram shows the relationship of the various constituents of wood:



It is possible to obtain extracted free wood by

1. Eliminating lignin to give holocellulose section
2. Eliminating holocellulose to give lignin section
3. Eliminating all organic material, both lignin and holocellulose to give ash section.

All three can be obtained without destroying the mechanical structure. Slides were shown of these mechanically perfect sections.

Holocellulose is white containing alpha cellulose but also contains the hemicellulose which oxidizes rather easily and turns to a cream color if exposed for any length of time.

It hydrates rapidly, giving a good glassine sheet due to carboxyl groups.

No uses have as yet been found for holocellulose but these may come later.

Among those present were: G. L. Schartz, Dupont Company, Wilmington, Del.; J. H. Brougham, Penn Fibreboard Corporation, York, Pa.; E. A. Shallcross, Frankford, Pa.; F. J. McAndrews, McDowell Paper Mills, Manayunk, Pa.; J. D. Davis, Dill & Collins, Inc., Philadelphia; L. M. Booth, Booth Chemical Company, Elizabeth, N. J.; J. F. Halladay, Container Corp. of America, Manayunk; R. W. K. Ulm, Container Corporation of America, Manayunk; C. M. O'Connor, Valley Forge Labs., Conshohocken, Pa.; W. M. Shoemaker, National Vulcanized Fibre Company, Yorklyn, Del.; A. R. Boyd, F. C. Huyck & Sons, Albany, N. Y.; R. T. Bingham, Titanium Pigment Company, New York, N. Y.; A. L. M. Bixler, Riegel Paper Corporation, Milford, N. J.; W. D. Harrison, same company; R. W. Ball, Krebs Pigment and Color Corporation, Newport, Del.; J. R. Atwater, Dill & Collins Inc., Philadelphia; V. Jacobsen, National Aniline and Chemical Company, Philadelphia; G. J. Ritter, Forest Products Laboratory, Madison, Wis.; E. E. Helm, Reliance Electric and Engineering Company, Cleveland, Ohio; G. B. Martin, General Dyestuff Corporation, Philadelphia; C. A. Shubert, Dill & Collins Inc., Philadelphia; L. Justice, Valley Forge Labs., Conshohocken, Pa.; W. F. Mitchell, Pennsylvania Salt Manufacturing Company, Philadelphia; M. C. Maxwell, McDowell Paper Mills, Manayunk; H. H. Street, National Vulcanized Fibre Company, Yorklyn, Del.; E. H. Koontz, Reliance Electric and Engineering Company, Cleveland, Ohio; S. D. Reynolds, Container Corporation of America, Manayunk; V. L. Tipka, Wilmington, Del.; C. W. Rivise, Caesar & Rivise, Philadelphia; B. R. Havens, Container Corp. of America, Manayunk, Pa.; Ralph Mair, Krebs Pigment and Color Corporation, Newport, Del.; W. E. Brown, Container Corporation of America, Manayunk; A. E. Griffin, American Cyanamid and Chemical Corporation, Philadelphia; C. M. Dann, Krebs Pigment and Color Corporation, Newport, Del.; A. S. Hall, Thwing-Albert Instrument Company, Philadelphia; H. J. Farra, Pusey & Jones Corporation, Wilmington, Del.; A. E. Waugh, U. S. Rubber Company, Philadelphia, Pa.; A. McInnes Jr., Pusey & Jones Corporation, Wilmington, Del.; James d'A. Clark, Scott Paper Company, Chester, Pa.

Dr. Thorne Honored by Norwegians

Dr. C. B. Thorne, vice-president of the Canadian International Paper Company, of Hawkesburg, Ont., was presented on December 2, with a diploma commemorating his appointment as an Honorary Member of the Technical Association of the Norwegian Paper Industry. The wording as translated is as follows:

"Dr. Ing. h.c. C. B. Thorne. With warmest thanks for your outstanding contribution towards the advancement of cellulose technique and the pulp industry—for your brilliance which is reflected on Norwegian Engineering Art—for the good collegiate spirit you have shown on all occasions.—Papirindustriens Tekniske Forening, at the General Assembly on April 13, 1937, has appointed you as Honorary Member."

The diploma was presented to Dr. Thorne by the Norwegian Consul General Daniel Steen, at the request of the Association and of the Norwegian Foreign Office and in the presence of personal friends of Dr. Thorne and official diplomats. Those present were the guests of Mr. and Mrs. Steen at luncheon.

Instrumentation Studies. XXI

A Study of Photoelectric Instruments for the Measurement of Color: Reflectance and Transmittance

Part II: The General Radio Color Comparator. Type 725-A

By The Staff of The Institute of Paper Chemistry

Introduction

The name of this instrument implies that it is suitable for comparing, i.e., matching, colors. The General Radio Company also considers it a "modified three-point spectrophotometer"[1], and in one place[2] it is stated, with reference to measurements made with the instrument, "The three meter readings resulting completely describe the color". The latter statement connotes the use of the instrument as a colorimeter.

In addition to measurements on color, the manufacturers recommend the instrument for the measurement of "brightness" and opacity.

All measurements made with the instrument are reflectance measurements. Consequently, it will be convenient to discuss the general features of the instrument that condition its use in the measurement of reflectance, and then to discuss its application for the specific purposes mentioned above.

Since the critical discussion of the methods of reflectance measurement contained in Part I of this series (Instrumentation Studies. XX)[3] will be referred to continually in order to eliminate needless repetition, and since the nomenclature hereafter used will be but partly intelligible unless the reader is familiar with Part I, a copy of it should be at hand.

Only one instrument (Serial No. 115) was studied, but most of the discussion is applicable to, and most of the data should be characteristic of, all instruments of that model (type). Such discussion and data as may be applicable only to the particular instrument examined will be specifically so labeled.

SECTION I

Description and Operation of the Instrument

The instrument is mounted in a compact cabinet of portable size and weight. The optical system is shown schematically in Fig. 1. Light from a concentrated filament lamp passes vertically through a pair of large aperture condensing lenses and the converging beam thus formed passes through an infra-red-stopping filter, through one of the four other filters (red, green, blue, or "daylight"), and through the hole in an annular blocking-layer photocell. The beam then strikes the sample which is placed horizontally over the top of a cylindrical "well" surrounding the photocell. The cylindrical wall of this well is a polished metal surface which, by specularly reflecting light reflected from the sample, increases the effective angular aperture of the photocell. The photocell current is measured by a microammeter having a satisfactorily large and linearly divided scale graduated from 0 to 110 microamperes. The sensitivity of the meter is controlled by potentiometer rheostats which shunt it and the photocell. Any one of the four filters may be selected by turning a knob on the panel of the instrument. The instrument operates from the usual 115-volt A.C. line.

The principal operations in using the instrument are as follows. The lamp is turned on and a warm-up period of at least fifteen minutes is allowed before readings are taken. The desired filter is turned into place, the reflectance standard is placed over the sample opening, and the meter is adjusted (by means of the sensitivity controls) to read the known reflectance value of the standard for the particular filter. The reflectance standard is replaced by the sample, whereupon the meter reading is the reflectance of the sample for the particular filter.

SECTION II

Spectral Characteristics of the Instrument

Consideration of Fig. 1 and of the chart in Fig. 5

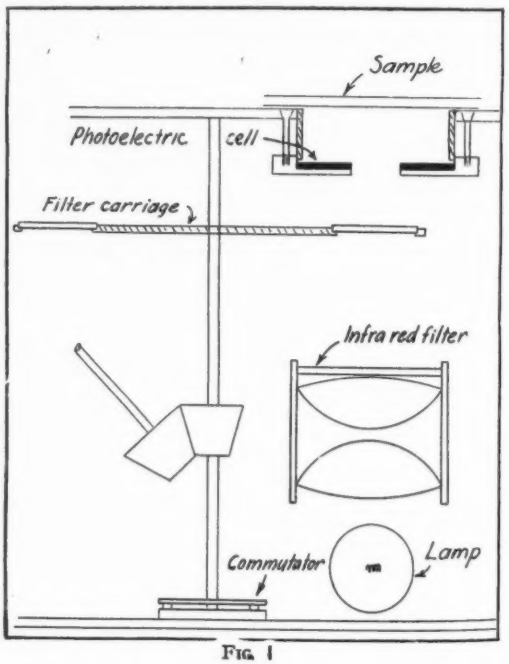


FIG. 1

[1] Instruction booklet issued with the instrument.
[2] The General Radio Experimenter, 10, No. 3-6 (August, 1935).
[3] Paper Trade J. Oct. 21 and 28, 1937.

of Part I, shows the instrument to be of the general classification (S5) [or (S6)]-(G3)-(P6). The appropriate divisions of Section IV of Part I should be familiar to the reader at this point.

The intensity of the lamp constituting the light source of the instrument is ample, but, as seems unavoidable, the intensity is secured at the expense of the useful life span of the lamp. The average life of a lamp is slightly less than fifty hours, after which time it is necessary to rotate the lamp in its horizontal mount through an angle of 180 degrees. As the upper surface of the lamp envelope darkens more rapidly than the bottom surface, this rotation presents a relatively fresh portion of the envelope to the condensing system. After one such rotation the lamp must be replaced by a new one.

During the course of a four-hour period of operation, the energy output of the lamp was observed to decrease noticeably; this was evidenced by the need of increased meter sensitivity when the instrument was standardized. In rotating the lamp, or in replacing it, adjustment of its position and the position of the condensing lenses was necessary in order to reproduce the original geometry of illumination of the sample. The image of the lamp filament was focussed in a plane twelve inches above the sample aperture, and the spot of light striking the sample was centered over the photocell. The design of the lamp mounting was excellent as regards electrical contact and provision for dissipation of heat, but the latitude of adjustment for focusing was scanty.

It is important that the readings of an instrument of this type be not too sensitive to the slight changes in geometry occasioned by replacement of a lamp and the consequent readjustment of the illuminating system, i.e., that the observed reflectance of a sample, relative to magnesium carbonate or magnesium oxide, be sensibly the same before and after such a replacement. Table I shows reflectances for the white Carrara glass supplied with the instrument after three such adjustments. The first column of the table gives the filter used; the second, third, and fourth columns give the observed reflectances relative to magnesium carbonate as measured on three occasions after replacement or readjustment of the lamp. The fifth column gives the reflectance values of the glass slab as recommended by the manufacturer. Since these observations extended over a period of 35 days, they indicate the reproducibility of the instrument

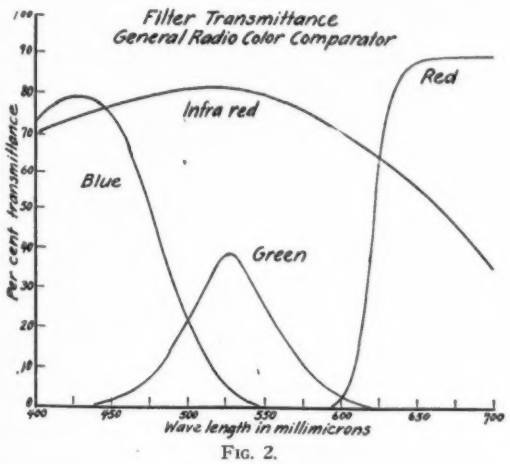


FIG. 2.

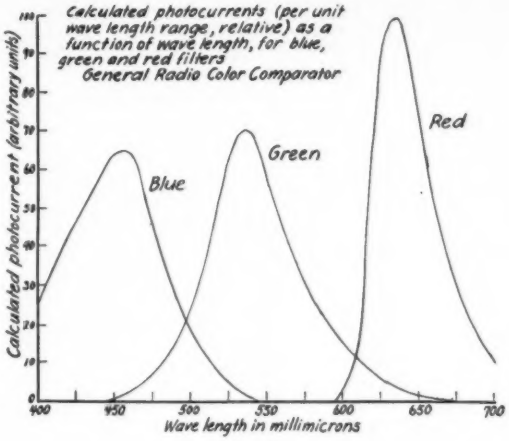

Calculated photocurrents (per unit wave length range, relative) as a function of wave length, for blue, green and red filters
General Radio Color Comparator
Red
Green
Blue
Calculated photocurrent (arbitrary units)
Wave length in millimicrons

FIG. 3.

readings on the glass standard. The variations in observed reflectance are within the one per cent claimed by the manufacturer.

TABLE I

Filter	Observed Reflectances * vs. Magnesium Carbonate			General Radio Value
	Sept. 17, '36	Sept. 22, '36	Oct. 22, '36	
"Daylight"	88.6	88.9	88.6	90
Blue	87.1	86.9	86.9	90
Green	90.1	89.5	89.9	90
Red	86.4	86.5	86.3	90

* In per cent, relative to magnesium carbonate. Linearity correction not applied.

The spectral transmittance of the red, green, and blue filters and the infra-red-stopping filter[4] are shown in Fig. 2. In Fig. 3 are shown the relative photocell currents as a function of the wave length of light emitted by the lamp, passed by the infra-red-stopping filter, passed by the indicated chromatic filter, and received by the photocell. From a comparison of the curves of Fig. 3 (for the red, green, and blue filters) with the tristimulus distribution curves of Fig. 7 of Part 1, keeping in mind the restrictions imposed by equation (1) of Section VII of Part I, it is immediately evident that the General Radio Color Comparator is *not* a photoelectric *colorimeter.*

The spectral regions transmitted by the filters, as shown in Fig. 2, are so broad that one would expect the reflectances determined with them to show maximum deviations from the monochromatic reflectances, measured at wave lengths corresponding to the effective wave lengths[5] of the filters, for samples whose spectral reflectance curves show rapid changes in slope [as discussed in (S4), Section IV, Part I]. This expectation is justified by the curves and points

[4] The data for Figs. 2 and 3 were obtained from the instruction booklet issued with the instrument.

$$\lambda_e = \int_0^\infty ETS\lambda d\lambda \Big/ \int_0^\infty ETRS d\lambda,$$

where,
E = relative spectral energy distribution of light source,
T = spectral transmittance of filter,
R = spectral reflectance of sample, and
S = relative spectral response of photocell wave length of light.
For practical reasons, the effective wave length is usually taken to be

$$\lambda_{e'} = \int_0^\infty ETS\lambda d\lambda \Big/ \int_0^\infty ETS d\lambda.$$

shown in Fig. 4. These curves are spectrophotometric curves obtained on the General Electric Recording Photoelectric Spectrophotometer (Hardy Color Analyzer) (S2-G2-P2). Each curve (and all others hereafter shown) is the average of two curves for two mutually perpendicular orientations of the sample about the axis of the incident light. They show the spectral reflectances, relative to magnesium carbonate, of two paper samples. Curve 1 represents a yellow and curve 2 a green sample. The plotted points (*solid* circles for curve 1 and the *open* circles for curve 2) are the reflectances measured with the General Radio instrument and plotted at the effective wave lengths (λ_e') of the filters. It is seen that the departure of the points from the curves is greatest near bends in the curves. The agreement between observed reflectances and the spectrophotometric curve for a typical white sample is shown in the curve of Fig. 5. Data for a number of other "white" and colored samples are shown in Table II. The unbracketed numbers are the reflectances determined on the General Radio instrument, while the numbers in parentheses are the monochromatic reflectances from spectrophotometric curves.

The infra-red stopping filter does not "cut-off" as sharply as is desirable. The near infra-red light passed by this filter partially accounts for the consistently found discrepancy between observed red reflectance and the monochromatic reflectance for the effective wave length of the red filter.

Inspection of curve 2 of Fig. 4 reveals that the blue reflectance obtained for the green sample is approximately 100 per cent greater than the monochromatic reflectance. This, at first sight, might be interpreted as being due to infra-red light passed by the blue filter and the infra-red-stopping filter. However, study of blue reflectance data on red samples, which should exhibit large errors due to infra-red reflectance, shows that an error of this nature should be of the order of 12 per cent. The 100 per cent error observed in the case of the green sample must, therefore, be attributed to some other cause. Shift of effective wave length to the maximum possible value (less than 470 millimicrons for the green sample) does not appreciably reduce the error. It seems clear that the error is due largely to infra-red fluorescent radiation excited in the sample by the blue light incident upon it [see *Paper Trade J.* 104, No. 20:45 (May 20, 1937) for an account of the discovery of intra-red fluorescent radiation]. Special measurements made upon the green sample in question demonstrated that it exhibits infra-red fluorescence to a marked degree. It would seem, in general, that reflectance measurements obtained on the General Radio instrument would be subject to this fluorescence error.

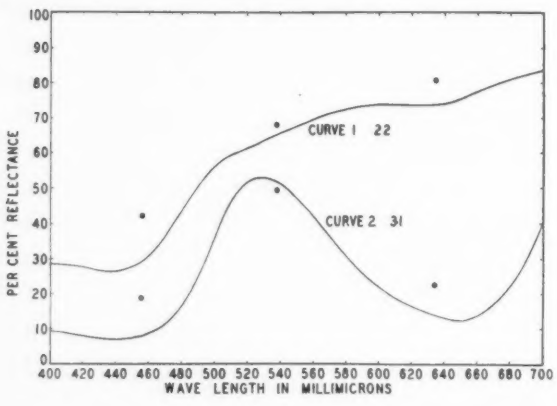


FIG. 4.

General Radio Color Comparator results Curve 1, Sample 22; curve 2, Sample 31; magnesium carbonate, 100 per cent.

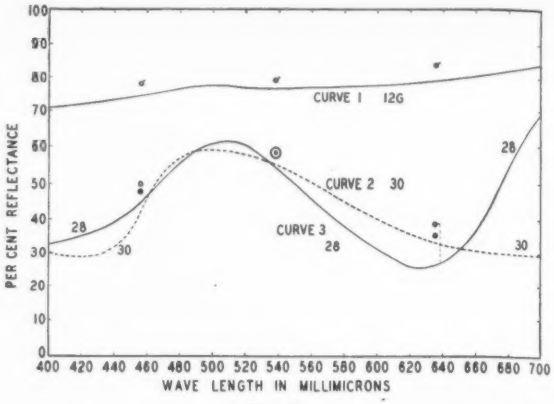


FIG. 5.

General Radio Color Comparator results Curve 1, Sample 12G; curve 2, Sample 30; curve 3, Sample 28; magnesium carbonate, 100 per cent.

TABLE II

Sample No.	Reflectances * Red	Green	Blue
1	78.6 (79.0)	79.2 (76.8)	79.3 (76.3)
2	73.4 (71.0)	79.2 (76.2)	83.2 (78.9)
3	82.1 (79.5)	82.0 (77.8)	82.5 (78.2)
4	80.1 (79.6)	80.2 (77.9)	81.5 (77.1)
5	74.7 (73.6)	80.4 (77.3)	86.2 (81.6)
6	70.2 (68.0)	73.9 (71.2)	80.6 (74.1)
7	70.9 (67.7)	79.3 (76.8)	82.7 (78.8)
8	73.3 (71.5)	78.2 (75.5)	84.2 (78.1)
9	60.8 (60.9)	67.6 (65.2)	77.5 (71.2)
10	70.6 (69.3)	73.4 (69.5)	80.0 (73.3)
11	74.8 (72.5)	79.9 (76.5)	85.7 (81.2)
12	66.4 (62.5)	71.0 (66.8)	78.0 (71.0)
13	77.2 (75.8)	79.7 (77.7)	82.2 (77.8)
14	69.9 (67.0)	74.9 (72.0)	80.3 (74.8)
15	78.9 (78.1)	82.0 (80.6)	84.8 (82.1)
16	41.1 (37.6)	46.9 (44.0)	49.5 (45.7)
17	27.1 (21.7)	39.1 (36.8)	50.1 (45.6)
18	9.7 (7.0)	26.0 (24.5)	54.1 (47.6)
19	50.8 (45.1)	67.7 (65.8)	89.2 (84.4)
20	56.2 (56.9)	56.7 (53.3)	41.9 (39.3)
21	58.5 (57.8)	51.1 (47.4)	28.7 (27.4)
22	42.0 (29.9)	67.7 (75.5)	80.5 (73.8)
23	39.5 (30.6)	68.9 (70.7)	85.0 (80.2)
25	35.3 (30.6)	36.7 (31.1)	86.0 (81.7)
26	36.7 (36.5)	27.4 (21.3)	77.2 (70.6)
27	56.1 (55.7)	54.1 (50.2)	81.7 (78.1)
32	9.1 (8.4)	7.1 (5.9)	67.8 (62.6)
34	10.0 (7.7)	9.9 (8.1)	45.8 (39.0)
35	15.0 (14.5)	7.8 (6.1)	21.2 (13.7)
36	18.4 (17.6)	11.8 (8.7)	16.2 (11.4)

* In per cent, relative to magnesium carbonate.

SECTION III

Geometrical Features of the Instrument

The geometry of illuminating and viewing in this instrument is a hybrid most nearly described by (G3) of Fig. 5, Part I. The "integrating" arrangement is far from being an ideal integrating sphere, and it should not be considered as such (*see* the division on Geometry, Section IV, Part I).

Although the polished cylindrical wall around the photocell increases the apparent sensitivity of the photocell by increasing the solid angle through which reflected light from the sample is collected, it also introduces variable, and unknown, factors into the geometry of viewing. The fraction of the light reflected from the sample which strikes the cylindrical wall, and is reflected to the photocell, and the distribution of light over the area of the photocell, are dependent on the angular distribution of the light reflected by the sample. The average angle of incidence of light on the photocell surface is a function of the proportion of that light which comes from the wall.

The geometry is such that an undesirable amount of light specularly reflected from the sample may reach the photocell. A "front-surface" mirror was tested and an apparent reflectance of 22 per cent was observed. For any given sample the amount of specularly reflected light that is recorded is a function of the angular distribution of that light (*see* Fig. 6, Part I).

Since the effect of these geometrical factors should depend upon the gloss of the sample surface, it was expected that discrepancies might appear between observations on glossy and matte samples. Such was not the case as will be shown in a later paragraph when Table III is discussed.

The symmetry of illuminating and viewing is such that the observed reflectances are independent of the orientation of the sample's surface structure with respect to the axis of the incident light.

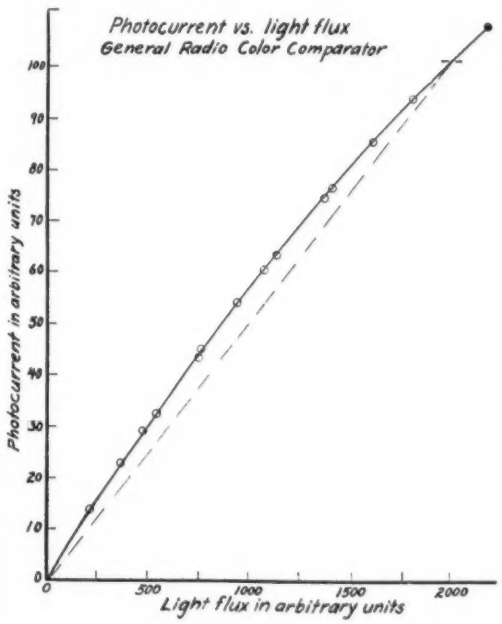


FIG 6.

SECTION IV

Photometrical Features of the Instrument

As was pointed out and emphasized in the division on photometry, Section IV, Part I, the primary requisite of an instrument, in which the photometry is accomplished by direct reading of the photocurrents, is that observed photocurrents be directly proportional to the light flux. Due to the nature of blocking-layer photocells, the presence, or absence, of this desired linearity is a function of the *particular* photocell and associated electrical circuit. For a given range of light intensities, the response of a particular photocell becomes more nearly linear as the resistance across its terminals becomes smaller.

The linearity of this particular instrument was tested by an application of the inverse square law of light intensity variation. A carefully shielded, concentrated filament lamp was mounted vertically over the photocell in such a way that its vertical height above the photocell surface could be accurately measured with a cathetometer. The lamp voltage was kept constant by means of rheostats in series with a 6-volt storage battery. The instrument meter reading was observed as a function of the height of the lamp filament above the photocell surface. The inverse square law was applied, and the relative intensities of illumination on the cell were calculated for the various heights. The curve of Fig. 6, representing the meter readings as a function of the intensity of illumination, was then plotted. If the desired linearity exists, this plot should be a straight line passing through the origin of coordinates. Such linearity was not found, as is seen from the curve. A straight line was drawn through the points on the curve representing meter readings of zero and 100. The correction for non-linearity, at a given meter reading, is then given by the difference in the ordinates of the curve and the straight line at the abcissa of the reading. The maximum deviation from linearity was 6.2 divisions, at a meter reading of 57, a percentage error of 10.9 per cent. *All data given in this report have been appropriately corrected for this non-linearity, excepting the data given in Table I.*

SECTION V

The Measurement of "Brightness"

The "brightness" of a sample means one of two things, either the visual efficiency of the sample according to the standard I.C.I. observer (consult the division on luminosity, Section VI, Part I), or "brightness" (of paper) as measured on a calibrated General Electric Reflection Meter using the No. 1 filter.

As mentioned in the discussion of the spectral characteristics of the instrument, the filters of the instrument do not satisfy the condition (4) of Section VI, Part I, and therefore the readings of the instrument with the green filter are not measures of the visual efficiency of the sample.

The claim that the instrument measures "brightness" refers to the grading brightness (for paper) as measured by the General Electric Reflection Meter. Table III presents a comparison of the blue reflectances measured with the General Radio instrument and the "brightness" measured with the General Electric Reflection Meter, using the No. 1 filter, for

"white" papers. The table also records measurements of the gloss of the samples, as measured on the Bausch and Lomb Glossmeter, in order to show the effect of gloss on the correspondence in question. It will be seen that, even after corrections for non-linearity have been made, the blue reflectances are consistently higher than the "brightness" values.

TABLE III *

Sample No.	General Radio Blue Reflectance; Uncorrected Readings	General Radio Blue Reflectance, Corrected for Non-linearity	General Electric Reflection Meter "Brightness"	Bausch and Lomb Gloss
1	82.5	78.6	76.7	11.6
3	85.5	82.1	80.4	6.5
4	83.8	80.1	78.7	5.7
5	79.2	74.8	71.4	13.6
6	75.3	70.3	67.1	10.7
7	75.9	71.0	67.3	12.6
8	77.9	73.3	70.2	10.0
9	66.7	60.8	58.8	4.6
10	75.6	70.6	67.5	8.6
11	79.3	74.9	71.5	14.5
12	71.9	66.5	62.7	17.8
12*g*	82.0	78.0	75.5	38.0
13	81.3	77.2	75.2	36.0

* Reflectance values given in this table are in per cent, relative to magnesium carbonate.

SECTION VI

The Measurement of Opacity

The opacities of eighteen "white" samples were measured with the instrument. These opacities were the ratios of the "daylight" reflectances of the samples backed by a black-felted surface to the "daylight" reflectances of the same samples backed by a block of magnesium carbonate. The opacities of the same samples were measured on the Bausch and Lomb Opacimeter. Table IV shows the values obtained by the two instruments.

TABLE IV

Sample No.	General Radio Opacities (In per cent)	Bausch and Lomb Opacities (In per cent)
1	80.0	83.6
2	96.7	96.6
3	79.1	81.3
4	82.7	84.3
5	84.1	86.5
6	84.4	86.0
7	87.8	87.5
8	84.9	85.3
9	98.2	96.5
10	97.5	96.5
11	96.5	96.0
14	91.9	91.6
15	97.9	97.1
W1	59.7	58.9
W2	21.8	19.1
W3	44.9	41.9
W4	33.2	30.4

The values differ but there seems to be no definite trend to the variation. The differences between the opacities measured on the two instruments are probably due to differences in the geometries of illumination and viewing, to differences in the spectral character of the light used, and to difference in spectral response of the photocells.

SECTION VII

The Matching of Colors

The matching of colors may be considered from two points of view: one, that which involves the problem of indicating that two samples match, i.e., look alike; the other, that which scans the problem of what to tell the dye man when the samples do not match.

In order to match colors in the first sense, an instrument must yield readings that are unequivocally characteristic of the color presented to it, i.e., when two identical sets of instrument readings are obtained, the samples must be found to look alike, and when two significantly different sets of readings are obtained, the samples must look sensibly different. But the color of a sample depends on the illuminant under which it is viewed; therefore one instrument can be expected, at most, to pronounce matches for only one illuminant, It was pointed out in Part I that the spectral reflectance curve of a sample is the fundamental specification of the sample with regard to color. From the data given by the spectral reflectance curve, the color of the sample under any illuminant can be calculated (*see* Section VI, Part I). It is known that two samples having different spectral reflectance curves may match under some illuminant; e.g., it is a common experience to find samples matching under daylight but not under artificial light, or vice versa. The reason that two samples may match under one illuminant, even though their spectral reflectance curves are different, is that their tristimulus values (the equality of which is a criterion of the match) are determined by the areas under the curves obtained by plotting *ERU*, *ERV*, and *ERW* as a function of the wave length. The areas under two curves may be the same even though the curves are greatly different. Therefore, the tristimulus values of two samples may be identical for a particular illuminant even though their spectral reflectance curves are different. Under another illuminant the relative spectral energy distribution of the illumination will be different, the products *ERU*, *ERV*, and *ERW* will have new values, and the areas under the corresponding curves for the two samples may, or may not, be equal. Hence, the tristimulus values may, or may not, be equal. From this it is clear that no instrument but a true *colorimeter* can *directly* furnish readings that accurately indicate a match when the spectral reflectance curves are very different. When the spectral reflectance curves differ only *slightly*, a three-filter instrument such as the General Radio Color Comparator may be of help in arriving at a color match.

The three readings of a three-filter instrument may be of practical help to the dye man when he deals with simple mixtures of dyes, e.g., if he were dealing with a mixture of a blue and yellow dye, the three readings of the instrument might roughly indicate the component whose concentration needed to be increased, or decreased, in order to approach a match. However, the futility of attempting to infer the course of a spectral reflectance curve from three plotted points must again be emphasized. Curves 2 and 3 of Fig. 5 are shown to illustrate the situation. The curves are spectrophotometric curves of two green samples. The solid circles are the General Radio Color Comparator reflectance readings corresponding to curve 2. The open circles are the instrument readings corresponding to curve 3. Let the reader focus his attention on the solid circles and on curve 2. Having decided that these three points might reasonably be considered to define the curve, let the reader then try to reconcile the behavior of curve 3 with the location of the open circles, which are not far removed from the solid circles of curve 2.

Imports of Paper and Paper Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports, of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

WEEK ENDING DECEMBER 11, 1937
SUMMARY

Wall Paper ..... 21 bls., 29 cs.
Paper Hangings ..... 10 bls., 2 cs.
Painted Paper ..... 9 cs.
Newsprint ..... 8,369 rolls
Printing Paper ..... 125 rolls, 40 bls., 4 cs.
Wrapping Paper ..... 146 rolls, 102 bls.
Packing Paper ..... 23 cs,
Drawing Paper ..... 16 bls., 5 cs.
Filter Paper ..... 16 pkgs., 13 cs.
Surface Coated Paper ..... 19 cs.
Surface Baryta Coated Paper ..... 191 crates, 16 cs.
Metal Covered Paper ..... 17 cs.
Photo Paper ..... 6 cs. (unsensitized)
Decalcomania Paper ..... 2 cs., 19 drums (Duplex)
Decalcomanias ..... 27 cs.
Tissue Paper ..... 2 cs.
Parchment Paper ..... 50 cs. (imitation)
Silk Paper ..... 47 bbls.
Writing Paper & Envelopes ..... 2 cs.
Stencil Paper ..... 1 cs.
Colored Paper ..... 2 cs.
Tracing Cloth ..... 9 cs.
Paper Tubes ..... 51 ctns., 60 cs.
Straw Board ..... 68 rolls
Miscellaneous Paper ..... 23 rolls, 63 cs.

WALL PAPER

F. J. Emmerich Co., *Hansa,* Hamburg, 8 bls.
——, *Hansa,* Bremen, 4 bls., 17 cs.
——, *Pr. Harding,* Havre, 8 cs.
——, *Westernland,* Antwerp, 6 bls.
——, *Ausonia,* London, 4 cs., 3 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Merchant,* London, 10 bls., 2 cs.

PAINTED PAPER

——, *Normandie,* Havre, 9 cs.

NEWSPRINT

Jay Madden Corp., *Agra,* Kotka, 940 rolls.
N. Y. Evening Journal, *Agra,* Kotka, 251 rolls.
Lunham & Reeve, Inc., *Agra,* Kotka, 313 rolls.
Jay Madden Corp., *Pr. Harding,* Hamburg, 624 rolls.
N. Y. Evening Journal, *Pr. Harding,* Hamburg, 355 rolls.
International Paper Sales Co., *Towerfield #5,* Dalhousie, 1862 rolls.
International Paper Co., *Towerfield #5,* Dalhousie, 3298 rolls.
Perkins Goodwin & Co., *Hansa,* Hamburg, 181 rolls.
Jay Madden Corp., *Hansa,* Hamburg, 180 rolls.
Jay Madden Corp., *Hansa,* Bremen, 365 rolls.

PRINTING PAPER

Jay Madden Corp., *Pr. Harding,* Hamburg, 40 bls., 125 rolls.
R. J. Saunders, *Aquitania,* Southampton, 4 cs.

WRAPPING PAPER

Jay Madden Corp., *Pr. Harding,* Hamburg, 131 rolls, 102 bls.
Standard Products Corp., *Black Tern,* Antwerp, 15 rolls.

PACKING PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 6 cs.
——, *Black Heron,* Rotterdam, 4 cs.
Phoenix Shipping Co., *Hansa,* Bremen, 13 cs.

DRAWING PAPER

Japan Paper Co., *American Merchant,* London, 1 cs.
Devoe & Reynolds Co., Inc., *American Merchant,* London, 1 cs.
H. Reeve Angel & Co., Inc., *American Merchant,* London, 3 cs.
S. Bienfang, *Volendam,* Rotterdam, 16 bls.

FILTER PAPER

H. Reeve Angel & Co., Inc., *American Merchant,* London, 13 cs.
H. Reeve Angel & Co. Inc., *Aquitania,* Southampton, 16 pkgs.

SURFACE COATED PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 19 cs.

SURFACE BARYTA COATED PAPER

——, *Hansa,* Bremen, 115 crates.
L. A. Consmiller, *Hansa,* Bremen, 16 cs.
Globe Shipping Co., *Hansa,* Bremen, 76 crates.

METAL COVERED PAPER

K. Pauli Co., *Hansa,* Bremen, 17 cs.

PHOTO PAPER

J. J. Gavin Co., *Aquitania,* Southampton, 6 cs. (unsensitized)

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Scythia,* Liverpool, 2 cs., 19 drums, (Duplex).

DECALCOMANIAS

Sellers Transportation Co., *Hansa,* Hamburg, 27 cs.

TISSUE PAPER

Atlantic F'd'g Co., *Hansa,* Hamburg, 2 cs.

PARCHMENT PAPER

E. Dietzgen & Co., *Hansa,* Hamburg, 50 cs. (imitation)

SILK PAPER

Jay Madden Corp., *Pr. Harding,* Hamburg, 47 bbls.

WRITING PAPER & ENVELOPES

H. W. Robinson Co., *American Merchant,* London, 2 cs.

STENCIL PAPER

——, *Ausonia,* London, 1 cs.

COLORED PAPER

D. C. Andrews & Co., *Hansa,* Bremen, 2 cs.

TRACING CLOTH

C. Bruning Co., *Hansa,* Bremen, 9 cs.

PAPER TUBES

——, *Hansa,* Bremen, 60 cs., 51 ctns.

STRAW BOARD

——, *Maasdam,* Rotterdam, 68 rolls.

MISCELLANEOUS PAPER

T. N. Fairbanks, Co., Inc., *Kunikawa Maru,* Yokohama, 4 cs.
Japan Paper Co., *Excalibur,* Genoa, 15 cs.
Keuffel & Esser Co., *Hansa,* Hamburg, 23 rolls, 40 cs.
Lansen Naeve Corp., *Hansa* Bremen, 4 cs.

RAGS, BAGGINGS, ETC.

S. Shapiro & Sons, *Black Heron,* Rotterdam, 72 bls. bagging.
——, *Pr. Harding,* Hamburg, 98 bls. rags.
Hughes Fawcett, Inc., *Cameronia,* Glasgow, 55 bls. flax waste.
Beacon Wiper Supply Co., *Kunikawa Maru,* Kobe, 50 bls. rags.
Royal Manfg. Co., *Kunikawa Maru,* Kobe, 34 bls. rags.
Chase National Bank, *Fernlane,* Algiers, 50 bls. rags.
Great Eastern Packing & Paperstock Corp., *Volendam,* Rotterdam, 64 bls. bagging.
Philadelphia National Bank, *Westernland,* Antwerp, 73 bls. bagging.
——, *Westernland,* Antwerp, 94 bls. old strings.
Chase National Bank, *Westernland,* Antwerp, 65 bls. bagging.

Irving Trust Co., *Black Tern,* Antwerp, 48 bls. rags, 16 bls. flax waste.
Van Oppen & Co., *Black Tern,* Antwerp, 87 bls. paper stock.
E. J. Keller Co. Inc., *Black Tern,* ———, 231 bls. bagging.
Castle & Overton, Inc., *Lehigh,* Dundee, 69 bls. paper stock.
Chase National Bank, *Lehigh,* Dundee, 75 bls. paper stock.
Irving Trust Co., *Lehigh,* Dundee, 57 bls. paper stock.
E. J. Keller Co. Inc., *Excalibur,* ———, 104 bls. paper stock, 19 bls. bagging.
———, *Excalibur,* Genoa, 15 bls. rags
———, *Exchester,* Genoa, 24 bls. rags.
Hicks Costarino Co., *Exchester,* Genoa, 153 bls. rags.
Keene, Inc., *Exchester,* Genoa, 145 bls. bagging.
Castle & Overton, Inc., *Exchester,* Genoa, 66 bls. rags.
R. Blank, *Exchester,* Genoa, 69 bls. old cottons.
W. J. Green, *Exchester,* Genoa, 94 bls. rags.
E. J. Keller Co. Inc., *Exchester,* ———, 183 bls. rags, 236 bls. bagging.
W. Steck & Co., *Exchester,* Alexandria, 62 bls. bagging.
Hicks Costarino Co., *Exchester,* Alexandria, 39 bls. rags.
Banco Coml. Italiane Trust Co., *Exchester,* Alexandria, 93 bls. bagging.
Castle & Overton, Inc., *Exchester,* Alexandria, 158 bls. rags.
E. J. Keller Co., Inc., *Black Eagle,* ———, 38 bls. paper stock.
E. J. Keller Co., Inc., *Collamer,* ———, 241 bls. paper stock.

HIDE CUTTINGS

American Express Co., *Scythia,* Liverpool, 660 bags.
———, *H. Jaspar,* Antwerp, 96 bls.

OLD ROPE

W. Steck & Co., *Maasdam,* Rotterdam, 47 coils.
Continental Bank Trust Co., *Black Heron,* Rotterdam, 47 coils.
Loumar Textile By Products, *Kunikawa Maru,* Kobe, 39 bls., (waste).
G. M. Graves Co., Inc., *Toronto City,* Bristol, 59 coils.

WOOD PULP

Castle & Overton, Inc., *Agra,* Viipuri, 2439 bls. wood pulp.
Lagerloef Trading Co., *Agra,* Viipuri, 3400 bls. sulphite, 655 tons.
Lagerloef Trading Co., *Agra,* Viipuri, 254 bls. sulphate, 50 tons.
Lagerloef Trading Co., *Agra,* Spjutsund, 1350 bls. mechanically ground, 270 tons.
Absorbo Beer Pad Co., *Pr. Harding,* Hamburg, 104 bls. wood pulp.
Castle & Overton, Inc., *Dorothy,* Hamburg, 490 bls. wood pulp, 100 tons.
Lagerloef Trading Co., *Gorm,* Kemi, 1930 bls. sulphate, 312 tons.
Lagerloef Trading Co., *Gorm,* Pateniemi, 5000 bls. sulphate, 1000 tons.
Bulkley Dunton Pulp Co., Inc., *Volendam,* ———, 735 bls. wood pulp.
Perkins Goodwin & Co., *Batory,* Gdynia, 3271 bls. wood pulp, 504 tons.
———, *Livenza,* Trieste, 501 bls. wood pulp.
Chase National Bank, *Idefjord,* Oslo, 3000 bls. sulphite, 508 tons.
J. Andersen & Co., *Idefjord,* Greaker, 2500 bls. sulphite, 506 tons.
Bankers Trust Co., *Hansa,* Hamburg, 748 bls. sulphite, 151 tons.
Castle & Overton, Inc., *Hansa,* Hamburg, 1500 bls., wood pulp, 290 tons.
Bank of N. Y. Trust Co., *Hansa,* Hamburg, 555 bls. wood pulp, 111 tons.
Price & Pierce, Ltd., *Gypsum King,* Windsor, 500 bls. wood pulp.
Gottesman & Co., Inc., *Kolsnaren,* Sweden, 500 bls. sulphite.

WOOD PULP BOARDS

Jay Madden Corp., *Agra,* Viipuri, 79 bls.
Jay Madden Corp., *Agra,* Kotka, 82 pkgs., 21 rolls.

ORANGE IMPORTS

WEEK ENDING DECEMBER 11, 1937

Lagerloef Trading Co., *Agra,* Viipuri, 5080 bls. sulphate, 1016 tons.

ALBANY IMPORTS

WEEK ENDING DECEMBER 11, 1937

Price & Pierce, Ltd., *Idefjord,* Sarpsborg, 900 bls. sulphite, 152 tons.
The Borregaard Co. Inc., *Idefjord,* Sarpsborg, 300 bls. sulphate, 50 tons.
Price & Pierce, Ltd., *Idefjord,* Oslo, 6825 bls., sulphite, 1385 tons.
E. M. Sergeant Pulp & Chemical Co., *Idefjord,* Nygard, 900 bls., chemical pulp, 152 tons.

BOSTON IMPORTS

WEEK ENDING DECEMBER 11, 1937

Elliott Addressing Machine Co., *Tai Ping,* Yokohama, 9 cs. paper.
Textile Waste Supply Co., *Kunikawa Maru,* Kobe, 50 bls. rags.
Beacon Wiper Supply Co., *Kunikawa Maru,* Kobe, 50 bls., rags.
Pagel Horton & Co., Inc., *Sagoporack,* Sweden, 250 bls., wood pulp.
Parsons & Whittemore, Inc., *Crefeld,* ———, 850 bls. wood pulp.
Parsons & Whittemore, Inc., *Lehigh,* ———, 266 bls., wood pulp.
Price & Pierce, Ltd., *Sagoporack,* ———, 570 bls., bleached sulphite.
Price & Pierce, Ltd., *Sagoporack,* ———, 4662 bls., unbleached sulphite.
Price & Pierce, Ltd., *Sagoporack,* ———, 3000 bls., unbleached sulphate.

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 11, 1937

United Clay Mines, Corp., *Maasdam,* Rotterdam, 51 tons china clay.
J. M. Hagy Waste Works, *Kunikawa Maru,* Kobe, 75 bls. rags.
———, *Kunikawa Maru,* Kobe, 150 bls., cotton waste.
E. J. Keller Co. Inc., *Kunikawa Maru,* ———, 500 bls. rags.
E. J. Keller Co. Inc., *Black Tern,* ———, 379 bls., rags.
J. M. Hagy Waste Works, *Black Tern,* Antwerp, 44 bls., rags.
———, *Livenza,* Trieste, 335 bls., wood pulp.
Castle & Overton, Inc., *Lehigh* Hamburg, 2075 Bls., wood pulp, 415 tons.
———, *Lehigh* Hamburg, 56 rolls wrapping paper.
J. T. Flannery, Inc., *Exchester,* Casablanca, 63 bls., rags.

WILMINGTON IMPORTS

WEEK ENDING DECEMBER 11, 1937

Gottesman & Co., Inc., *Kolsnaren,* Sweden, 3050 bls., sulphite.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 11, 1937

Congoleum Nairn Co., *Black Heron,* Antwerp, 81 bls., rags.
Congoleum Nairn Co., *Exchester,* Casablanca, 760 bls., rags.
———, *Kunikawa Maru,* Kobe, 144 bls., rags.
———, *Livenza,* Trieste, 833 bls., wood pulp.
Pagel Horton & Co., Inc., *Ditmar Koel,* Sweden, 1500 bls., wood pulp.
Gottesman & Co., Inc., *Kolsnaren,* Sweden, 5400 bls., sulphite.
Parson & Whittemore, Inc., *City of Norfolk,* ———, 1359 bls., wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING DECEMBER 11, 1937

E. J. Keller Co., Inc., *Monstella,* ———, 131 bls., paper stock.

GALVESTON IMPORTS

WEEK ENDING DECEMBER 11, 1937

Gottesman & Co., Inc., *Kexholm,* Sweden, 4100 bls., sulphite.

Marvelhide Sample Book

The Marvellum Company, Holyoke, Mass., has just issued a sample book of its new Marvelhide cover stock. Marvelhide is the newest of the eight distinctive covers made by the Marvellum Company. It is most attractive in appearance, has great strength and durability and is ideally suited to printing processes, yet is moderately priced.

The Marvellum Company is rapidly appointing exclusive distributors in the larger cities all over this country and abroad.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL
Wednesday, December 15, 1937.

The wholesale paper market as a whole reports little or no improvement for the current week. The demand for nearly all grades of paper continues to be reported as light, with consumer demand still at a low ebb. Prices of all grades of paper remain firm.

Although inventories of jobbers are admitted to be so low that most merchants and consumers are buying for current needs only, few complaints of reductions from the prevailing market prices are reported. An instance of the firmness of the paper market is the present stability in the prices of book papers. In some cases inventories in publishers' hands have been reduced more than two hundred per cent, while the percentage of sales has only declined about three per cent.

While this month is less active that the December of last year, it is generally a quiet period, for inventory is now being taken. A substantial upturn is expected after this seasonal lull, based upon the consensus of the trade that, as a result of calculating their depleted stock, dealers will begin to replenish their supplies early next year.

The newsprint market is active, with contract shipments moving freely.

The demand for book papers is reported as on about the level of the preceding week. The tissue paper market is quiet, with prices firm. The demand for kraft paper is reported as slightly higher. The box board market continues to report demand as light, with no price changes reported for this week.

Chemical Pulp

The chemical pulp market is reported as quiet, with demand continuing downward. Prices are unchanged from previous quotations.

Mechanical Pulp

The demand for mechanical pulp continues to decline. Prices are firm and are unchanged from last week's quotations.

Old Rope and Bagging

The old rope market continues quiet. Prices are about on the level of last week and continue to hold firm. The demand for bagging is reported as light and prices are unchanged.

Rags

Trading in the domestic rag market is spasmodic. Prices are firm and unchanged from former quotations. The foreign rag market reports prices as holding up better than domestic grades, due to the better home demand. Nominal prices prevail.

Waste Paper

The waste paper market is reported as very quiet. The demand for the foreign grades is slightly better than that of the waste paper market in general. Prices are firm.

Twine

The demand for twine continues light. Prices are at the level of last week.

Finland Exports More Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 15, 1937.—Exports of paper from Finland during the first 9 months of the current year were approximately 20 percent higher than during the corresponding period in 1936. Proportionately the largest increase occurred in exports of boards which totaled 72,270 tons as against 51,076 metric tons, an increase of 41 percent. Exports of wrapping papers amounting to 68,414 metric tons were 28 percent higher than last year. Exports of newsprint which account for over 60 percent of the total paper exports, amounted to 285,414 tons, an increase of 14 percent over a year ago.

Pulp exports were also higher than last year although proportionately not as large an advance occurred here as in the paper branch of the industry. Shipments of chemical pulp were approximately 11 percent higher than during 1937, this increase being equally distributed between the sulphite and sulphate branches. Total chemical pulp shipments amounted to 861,902 metric tons, of which 604,023 tons represented sulphite and 257,879 tons sulphate pulp. Exports of mechanical pulp amounting to 212,683 metric tons were only 2.4 percent higher than during 1936.

Norway Exports More Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 8, 1937.—Exports of wood pulp from Norway during the first nine months of this year reached a total of 717,152 metric tons, as against 638,281 tons during the corresponding nine months of last year, according to reports received by the Department of Commerce.

Shipments of mechanical pulp totaled 439,669 metric tons, nearly 11 per cent over the figure recorded for the corresponding period of last year. Chemical pulp shipments during the same period rose from 241,768 metric tons to 274,483 tons, an increase of 13 per cent. The largest increase occurred in shipments of bleached sulphite which amounted to 197,763 tons this year as against 168,593 tons in 1936. Shipments of unbleached sulphite amounted to 33,352 metric tons, or 28 per cent under last year, counteracted to some extent by the increase in shipments of unbleached sulphate.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL
Wednesday, December 15, 1937.

BLANC FIXE—The blanc fixe market is reported as steady. Prices are firm and comply with the quotations of the preceding week. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER—The demand for bleaching powder is unchanged for the current week. Prices are firm and continue at previously quoted levels. Bleaching powder is offered at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN—The casein market reports demand as moderate. Domestic standard ground casein is quoted at from 12 to 12½ cents per pound; domestic finely ground casein at 13 cents per pound; all in bags, car lot quantities.

CAUSTIC SODA—The demand for caustic soda is reported as steady. Prices are firm. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The china clay market continues at about the level of last week. Prices are firm. Imported clay is quoted at from $14.50 to $25 per ton, ship side. Domestic filler clay is offered at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines.

CHLORINE—The demand for chlorine is reported as steady. Prices continue unchanged from the quotations of the previous week. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b., at works.

ROSIN—The rosin market reports demand as fair. Prices are slightly lower for the current week. Paper making rosin is now quoted at $5.20; wood rosin at $5.40 per 280 pounds, gross weight, in barrels at Savannah. Seventy per cent rosin size is quoted at $2.81 per 100 pounds, in tank cars, f.o.b., shipping point.

SALT CAKE—The demand for salt cake is reported steady. Little, if any, domestic salt cake is available. Quotations range from $12 to $13.50 per ton; chrome salt cake from $11 to $12, f.o.b., shipping point. Imported salt cake is offered at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The soda ash market continues steady. Prices remain firm. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The demand for starch is reported as fair. Prices are unchanged for the current week. Globe pearl is offered at $2.60 per 100 pounds, in bags, and at $2.85 in barrels. Special paper starch is quoted at $2.70 per 100 pounds, in bags, and at $2.95 in barrels; all prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The sulphate of alumina market continues on about the level of the preceding week. Prices are firm. The commercial grades are quoted at from $1.25 to $1.60; iron free at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The demand for sulphur is steady, with prices unchanged from the quotations of the previous week. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Spot and nearby car lots are offered at $21 per ton.

TALC—The talc market reports demand as moderate. Prices are unchanged for the current week. Domestic talc is quoted at from $15 to $18 per ton, Eastern mines. Imported talc is offered at from $25 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—			
Roll, contract	42.50	@	—
Sheets	47.50	@	—
Boards, per ton—			
News	35.00	@	37.50
Chip	35.00	@	37.50
Sgl. Mla. Ll. Chip	52.50	@	—
Jute Lined Chip	52.50	@	—
White Pat. Coated	65.00	@	67.50
Kraft Liners	55.00	@	—
Binders Boards	75.00	@	80.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	.....	32.20@ 37.75
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
25% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$10.55@$12.75
No. 2	8.50@ 10.25	9.65@ 11.75
No. 4	7.60@ 9.25	8.80@ 10.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.15@$14.25
No. 2 Glossy Coated	10.55@ 12.25
No. 3 Glossy Coated	9.35@ 11.00
No. 4 Glossy Coated	8.80@ 10.50
No. 1 Antique (watermarked)	8.80@ 10.50
No. 2 Offset	8.05@ 9.50
A Grade E. F.	7.90@ 9.50
A Grade S. & S. C.	8.15@ 9.75
B Grade E. F.	7.30@ 8.75
B Grade S. & S. C.	7.55@ 9.00
C Grade E. F.	7.00@ 8.50
C Grade S. & S. C.	7.25@ 8.75
D Grade E. F.	6.75@ 8.25
D Grade S. & S. C.	7.00@ 8.50

Ivory & India at $.50 cwt. extra.

Kraft—per cwt.			
Standard Northern	$5.75	@	$7.40
Standard Southern	5.50	@	7.10
Sulphite, per cwt.			
50 lb. Steam Finish	$4.75	@	$5.85
Paper Towels, per case			
32 lb. Junior, unbleached	$2.65	@	$3.35
32 lb. Senior, unbleached	3.20	@	3.90
Wrapping Tissue, 24x36—480, per ream			
No. 1 White	$1.10	@	$1.50
No. 1½ White	1.00	@	1.40
No. 2 White	.70	@	1.00
Manila	.70	@	1.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	35.00	@	36.00
Dry	40.00	@	42.00

(Delivered)

No. 1 Domestic and Canadian	36.00	@	37.50

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.50	@	4.63
Prime Qualities—			
Easy-Bleaching Sulphite	3.00	@	3.75
Strong Unbleached Sulphite	2.50	@	3.50

(On Dock, Atlantic Ports)

Kraft Bleached	4.00	@	4.50
Kraft Light & Strong	3.00	@	3.50
Kraft No. 1	2.50	@	3.25
Kraft No. 2	2.25	@	2.50

(F.o.b. Pulp Mill)

Kraft Domestic	2.00	@	2.50

(Delivered)

Soda Bleached	3.25	@	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.50	@	7.75
Silesias, No. 1	5.25	@	5.75
New Unbleached	7.50	@	8.00
Blue Overall	6.25	@	6.50
Fancy	2.75	@	3.00
Washables	2.25	@	2.50
Mixed Khaki Cuttings	3.75	@	4.00
O. D. Khaki Cuttings	4.25	@	4.35

Old Rags

White, No. 1—			
Repacked	3.50	@	3.60
Miscellaneous	2.75	@	3.00
White, No. 2—			
Repacked	2.25	@	2.50
Miscellaneous	2.00	@	2.25
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Roofing Rags—			
No. 1	1.30	@	1.40
No. 2	.75	@	.80
No. 3 (bagging)	.70	@	.80
No. 4	.70	@	.80
No. 5A	.65	@	.70

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxford	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	5.50

HIGHEST GRADE

CLAYS

EASTON PAPER MAKERS IMPORTING CO., INC. EASTON, PENNSYLVANIA, U.S.A.

COATING FILLING

POWDERED

ZOPAQUE

White!

Yes . . ZOPAQUE is PURE titanium dioxide . . . the most OUTSTANDING of all white fillers!

ZOPAQUE is chemically pure and stable. CHALLENGES comparison for *whiteness* and *opacity*.

Try It!

The Chemical & Pigment Company

Baltimore, Md. Collinsville, Ill.

Lithophone, Cadmium Red, Cadmolith, Titanolith, Zopaque TiO_2

Marshall Dill, San Francisco, California

NOPCO

Foam Killers Wax Sizes
Soluble Oils Levelers
Eveners

NATIONAL OIL PRODUCTS COMPANY
HARRISON, N. J.
Boston Chicago Cedartown, Ga. San Francisco

TENSILASTIC
RUBBER ROLLS
Laboratory Controlled At Every Stage of Processing
AMERICAN WRINGER CO., INC., Woonsocket, R. I.

"COOPER 22"
The Original Chrome Nickel Alloy for the Paper Mill
CORROSION - HEAT - ABRASION RESISTING
Special Castings, Fittings, Valves, Pipe, etc.
THE COOPER ALLOY FOUNDRY CO.
ELIZABETH, NEW JERSEY

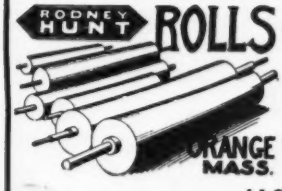
JORDAN FILLINGS
BEATER BARS
BED PLATES
The Noble & Wood Machine Co.
HOOSICK FALLS, N. Y.

HALF AGAIN
as much shower-pipe velocity
—No increase in pressure

In a Rainstorm, two small streams impinge at a predetermined angle—give a flat spray with nearly 50% increased velocity. Here's a cost-saving you can use. Write S & W for bulletin.

The SMITH & WINCHESTER MFG. Co.
SOUTH WINDHAM, CONNECTICUT 200

RODNEY HUNT ROLLS for PAPER MILLS



"Shaf-Tite" Felts in
Wood - Rubber - Metal
Pipe Rolls
Low in Cost—
High in Service

ALSO
Water Power Machinery Canal Gates
Variable Speed Drives
Tanks, Vats Endless Felt Washers

RODNEY HUNT MACHINE CO.
ORANGE — 38 Maple St. — MASS.

No. 4 White Linens	2.25	@	3.25
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	3.00
No. 4 White Cotton	1.90	@	2.20
Extra Light Prints	2.00	@	2.40
Ord. Light Prints	1.75	@	2.15
Med. Light Prints	1.55	@	1.95
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.00	@	—
Checks and Blues	2.00	@	—
Linsey Garments	2.00	@	2.10
Dark Cottons	1.60	@	1.70
Old Shopperies	1.45	@	—
New Shopperies	1.45	@	—
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.25	@	2.35
Domestic	2.15	@	2.35
Wool Tares, light	1.50	@	1.75
Wool Tares, heavy	2.00	@	2.10
Bright Bagging	1.60	@	1.70
Manila Rope—			
Foreign	3.25	@	3.50
Domestic	3.50	@	3.75
Jute Threads	2.75	@	3.00
Sisal Strings	2.35	@	2.45
Mixed Strings	Nominal		

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.70	@	2.80
Ordinary Hard White No. 1	1.90	@	2.00
Soft White No. 1	2.15	@	2.25
Flat Stock—			
Stitchless	.75	@	.85
Overissue Mag	.75	@	.85
Solid Flat Book	.55	@	.60
Crumbled No. 1	.40	@	.45
Ledger Stock	1.00	@	1.10
New B. B. Chips	.25	@	.30
Manila—			
New Env. Cut	1.85	@	2.00
New Cuttings	1.50	@	1.60
Old Kraft Machine— Compressed bales	.70	@	.75
News—			
No. 1 White News	1.10	@	1.20
Strictly Overissue	.45	@	.50
Strictly Folded	.27½	@	.30
No. 1 Mixed Paper	.15	@	.20

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.15	@	.16½
White Hemp	.16	@	.17½
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.11	@	.11½
Paper Makers	.11	@	.12¼
Tube Rope	.11½	@	.14¼
Wall Paper	.12½	@	.13¼
Wrapping	.14	@	.14½
Soft Fiber Rope	.13¾	@	.14¼
Cotton	.17	@	.21

(Hard Fibre)

Medium Java	.12	@	.12½
Mex. Sisal	.11	@	.11½
Manila	.21	@	.28

Domestic	3.00	@	3.25
Transmission Rope	1.75	@	1.90
Soft Jute Ropes	1.90	@	2.00
Jute Carpet Threads	1.40	@	1.60
Gunny No. 1			
Foreign	2.25	@	2.35
Domestic	1.80	@	2.00
Bleachery Burlap	3.75	@	4.00
Scrap Burlap			
Foreign	1.80	@	1.90
Domestic	1.60	@	1.80
Scrap Sisal	1.90	@	2.00
Scrap Sisal for Shredding	2.25	@	2.50
Wool Tares, Heavy	2.00	@	2.05
New Burlap Cuttings	2.45	@	3.00
Aust. wool pouches	3.25	@	3.50
Heavy baling bagging	2.15	@	2.25
Paper Mill Bagging	1.50	@	1.60
Bagging No. 2	.85	@	1.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03	@	.03¼
New White No. 1	.07½	@	.07¾
New White No. 2	.05½	@	.05¾
New Light Flannelettes	—	@	.06
Silesias No. 1	.05½	@	.06
New Black Silesias	.03¾	@	.04
Silesias No. 1 Soft Unbleached	.07¼	@	.08
Blue Cheviot	.06½	@	.06¾
Fancy	.03	@	.03¼
Washable	.02¾	@	.03
Cottons—According to grades—			
Blue Overalls	.06½	@	.06¾
New Black, soft	.03¾	@	.04
Khaki Cuttings	.03½	@	.04
O. D. Khaki	.04	@	.04¼
Corduroy	.02¾	@	.03
New Canvas	.07¼	@	.07¾
B. V. D. Cuttings	.08¼	@	.08¾

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.15	@	1.20
No. 2	—	@	.75
No. 3	—	@	.65

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.30	@	1.40
Dutch Blues	2.85	@	3.00
New Checks and Blues	2.85	@	3.00
Old Fustians	2.50	@	2.60
Old Linsey Garments	1.90	@	2.00
New Silesias	6.00	@	6.50

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.07	@	.07¼
New White, No. 2	.04½	@	.05
Light Silesias	.05¼	@	—
Silesias, No. 1	—	@	.05½
Black Silesias, soft	.03	@	.03½
New Unbleached	.07	@	.07½
Washable, No. 1	.02	@	.02¾
Blue Overall	.04	@	.04½
Cottons—According to grades—			
Washable, No. 2	.01½	@	.01¾
New Blue	.01¾	@	.01½
Fancy Percales	—	@	.03½
New Black Soft	.03	@	.03½
New Light Seconds	—	@	.05½
New Dark Seconds	1.00	@	1.25
Khaki Cuttings—			
No. 1 O. D.	.03½	@	.04
No. 2 Mixed	—	@	.02¾
Corduroy	.02½	@	.02¾
New Canvas	.06	@	.06½
New Black Mixed	.02	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.25
Miscellaneous	2.75	@	3.00
Twos and Blues—			
Miscellaneous	1.25	@	1.50
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1	—	@	1.25
Domestic No. 1	—	@	1.25
Domestic No. 2	1.00	@	1.10
Roofing Bagging	.80	@	.90

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	—
Domestic	1.70	@	1.75
Manila Rope	3.00	@	3.25
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap—			
No. 1	1.50	@	—
No. 2	1.00	@	1.25
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.35	@	2.40
No. 2 Hard White	2.00	@	2.10
No. 1 Soft White	2.00	@	2.10
No. 2 Soft White	1.40	@	1.50
No. 1 Mixed	.70	@	.75
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.25	@	1.30
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.85	@	.90
Manila Cuttings	1.50	@	1.75
Print Manila	.45	@	.50
Container Manila	—	@	.40
Kraft Paper	.90	@	.95
No. 1 Mixed Paper	.25	@	.30
Straw Board Chip	.25	@	.30
Binders Board Chip	.25	@	.30
Corrugated Board	.50	@	.55
Overissue News	.55	@	.60
Old Newspapers	.30	@	.35

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.25	@	2.40
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.70	@	.80
No. 1 Books, light	.65	@	.75
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.60	@	1.70
Manila Envelope Cuttings, extra quality	2.00	@	2.15
No. 1 Old Manila	.85	@	.95
White Blank News	1.30	@	1.40
No. 1 Kraft	.80	@	1.00
Mixed Papers	.10	@	.15
Print Manila	.45	@	.50
Container Manilas	.27½	@	—
Old Newspapers	.20	@	.25
Paper Wool Strings	—	@	.60
Overissue News	.45	@	.50
Box Board Chips	.35	@	.40
Corrugated Boxes	.25	@	.27½
Kraft corrugated boxes	.55	@	.65
Screenings wrappers	.45	@	.50

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.50	@	3.00

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	3.15	@	3.25
No. 1 Hard White	2.50	@	2.60
No. 1 Soft White	2.05	@	2.10
Ledger & Writings	1.30	@	1.40
Solid Books	1.20	@	1.25
Blanks	1.40	@	1.50
Krafts	.90	@	1.00
New Kraft Cuts	1.70	@	1.80
Manila Env. Cuts	2.15	@	2.25
Ex. No. 1 Manila	2.15	@	2.25
Print Manila	1.70	@	1.80
Overissue News	.60	@	.70
Old Newspapers—			
No. 1 Folded News	.45	@	.50
No. 1 Mixed Paper	.35	@	.40
Roofing Stocks—			
No. 1	2.00	@	2.10
No. 2	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White	11.35	@	—
No. 5 Bond—Tints	12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White	.1185	@	—
No. 5 Ledger—Tints	.1285	@	—
No. 6 Bond—White	10.75	@	—
No. 6 Bond—Tints	11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White	9.10	@	—
No. 7 Bond—Tints	9.60	@	—
No. 7 Bond—Golden Rod	11.10	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.10	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	10.00
Coated tinted	13.00	@	13.50
Wrapping—delivered—			
Rag Brown	4.85	@	5.55
White Wrap	4.00	@	—
"B" Manila	4.90	@	6.25
No. 1 Manila	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2	5.50	@	—

(F. o. b. Cars, Toronto)

News, per ton—			
Rolls (contract)	38.50	@	—
Sheets	45.50	@	—

Pulp

Ground wood	32.00	@	—
Unbleached Sulphite	59.00	@	—
Book (Class 1)	71.00	@	—
Writing (Class 2)	72.00	@	—
Select (Class 3)	73.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.50	@	—
Soft White	2.15	@	—
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut	1.50	@	—
Printed Manilas	.65	@	—
Kraft	1.00	@	1.10
News and Scrap—			
Strictly Overissue	.65	@	—
Strictly Folded	.60	@	—
No. 1 Mixed Paper	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.09	@	.09¼
Fancy Shirt Cuttings	.03½	@	.03¾